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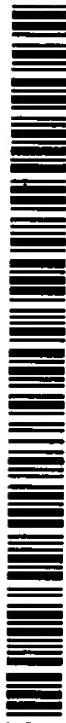
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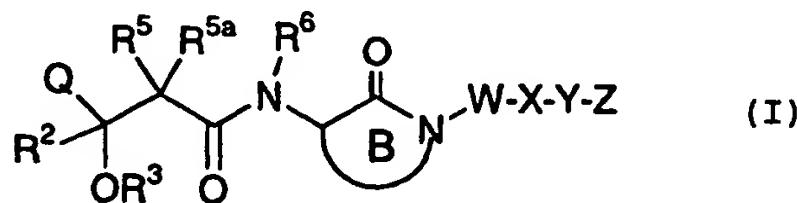
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(54) Title: HYDROXYALKANOYL AMINOLACTAMS AND RELATED STRUCTURES AS INHIBITORS OF A β PROTEIN PRODUCTION

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(I)

(57) Abstract: This invention relates to novel lactams having formula (I) to their pharmaceutical compositions and to their methods of use. These novel compounds inhibit the processing of amyloid precursor protein and, more specifically, inhibit the production of A β -peptide, thereby acting to prevent the formation of neurological deposits of amyloid protein. More particularly, the present invention relates to the treatment of neurological disorders related to β -amyloid production such as Alzheimer's disease and Down's Syndrome.

TITLEHYDROXYALKANOYLAMINOLACTAMS AND RELATED STRUCTURES AS
INHIBITORS OF A β PROTEIN PRODUCTION

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FIELD OF THE INVENTION

This invention relates to novel lactams having drug and bio-affecting properties, their pharmaceutical compositions and methods of use. These novel compounds inhibit the processing of amyloid precursor protein and, 10 more specifically, inhibit the production of A β -peptide, thereby acting to prevent the formation of neurological deposits of amyloid protein. More particularly, the present invention relates to the treatment of neurological disorders related to β -amyloid production such as 15 Alzheimer's disease and Down's Syndrome.

BACKGROUND OF THE INVENTION

Alzheimer's disease (AD) is a degenerative brain disorder characterized clinically by progressive loss of 20 memory, temporal and local orientation, cognition, reasoning, judgment and emotionally stability. AD is a common cause of progressive dementia in humans and is one of the major causes of death in the United States. AD has been observed in all races and ethnic groups worldwide, and 25 is a major present and future health problem. No treatment that effectively prevents AD or reverses the clinical symptoms and underlying pathophysiology is currently available (for review, Dennis J. Selkoe; Cell Biology of the amyloid (β)-protein precursor and the mechanism of 30 Alzheimer's disease, Annu Rev Cell Biol, 1994, 10: 373-403).

Histopathological examination of brain tissue derived upon autopsy or from neurosurgical specimens in effected individuals revealed the occurrence of amyloid plaques and 35 neurofibrillar tangles in the cerebral cortex of such patients. Similar alterations were observed in patients with Trisomy 21 (Down's syndrome), and hereditary cerebral

hemorrhage with amyloidosis of the Dutch-type.

Neurofibrillar tangles are nonmembrane-bound bundles of abnormal proteinaceous filaments and biochemical and immunochemical studies led to the conclusion that their

5 principle protein subunit is an altered phosphorylated form of the tau protein (reviewed in Selkoe, 1994).

Biochemical and immunological studies revealed that the dominant proteinaceous component of the amyloid plaque is an approximately 4.2 kilodalton (kD) protein of about 39

10 to 43 amino acids. This protein was designated A β , β -amyloid peptide, and sometimes β /A4; referred to herein as A β . In addition to its deposition in amyloid plaques, A β is also found in the walls of meningeal and parenchymal arterioles, small arteries, capillaries, and sometimes, 15 venules. A β was first purified and a partial amino acid reported in 1984 (Glenner and Wong, Biochem. Biophys. Res. Commun. 120: 885-890). The isolation and sequence data for the first 28 amino acids are described in U.S. Pat. No 4,666,829.

20 Compelling evidence accumulated during the last decade revealed that A β is an internal polypeptide derived from a type 1 integral membrane protein, termed β amyloid precursor protein (APP). β APP is normally produced by many cells both in vivo and in cultured cells, derived from 25 various animals and humans. A β is derived from cleavage of β APP by as yet unknown enzyme (protease) system(s), collectively termed secretases.

The existence of at least four proteolytic activities has been postulated. They include β secretase(s), 30 generating the N-terminus of A β , α secretase(s) cleaving around the 16/17 peptide bond in A β , and γ secretases, generating C-terminal A β fragments ending at position 38, 39, 40, 42, and 43 or generating C-terminal extended precursors which are subsequently truncated to the above 35 polypeptides.

Several lines of evidence suggest that abnormal accumulation of A β plays a key role in the pathogenesis of AD. Firstly, A β is the major protein found in amyloid plaques. Secondly, A β is neurotoxic and may be causally related to neuronal death observed in AD patients. Thirdly, missense DNA mutations at position 717 in the 770 isoform of β APP can be found in effected members but not unaffected members of several families with a genetically determined (familiar) form of AD. In addition, several other β APP mutations have been described in familiar forms of AD. Fourthly, similar neuropathological changes have been observed in transgenic animals overexpressing mutant forms of human β APP. Fifthly, individuals with Down's syndrome have an increased gene dosage of β APP and develop early-onset AD. Taken together, these observations strongly suggest that A β depositions may be causally related to the AD.

It is hypothesized that inhibiting the production of A β will prevent and reduce neurological degeneration, by controlling the formation of amyloid plaques, reducing neurotoxicity and, generally, mediating the pathology associated with A β production. One method of treatment methods would therefore be based on drugs that inhibit the formation of A β in vivo.

Methods of treatment could target the formation of A β through the enzymes involved in the proteolytic processing of β amyloid precursor protein. Compounds that inhibit β or γ secretase activity, either directly or indirectly, could control the production of A β . Advantageously, compounds that specifically target γ secretases, could control the production of A β . Such inhibition of β or γ secretases could thereby reduce production of A β , which, thereby, could reduce or prevent the neurological disorders associated with A β protein.

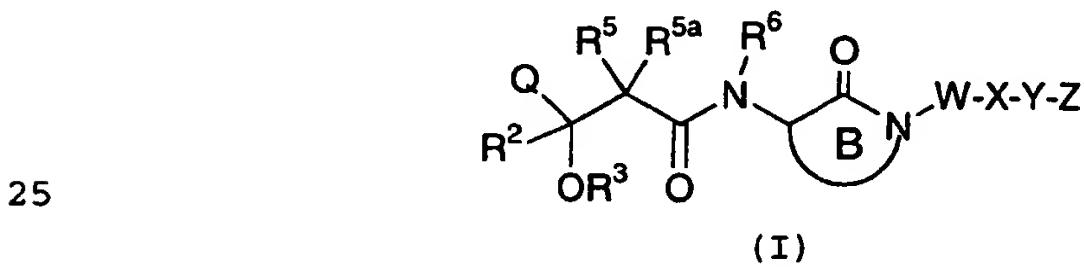
SUMMARY OF THE INVENTION

One object of the present invention is to provide novel compounds which are useful as inhibitors of the
 5 production of A β protein or pharmaceutically acceptable salts or prodrugs thereof.

It is another object of the present invention to provide pharmaceutical compositions comprising a pharmaceutically acceptable carrier and a therapeutically effective amount of at least one of the compounds of the
 10 present invention or a pharmaceutically acceptable salt form or prodrug form thereof.

It is another object of the present invention to provide a method for treating degenerative neurological disorders comprising administering to a host in need of such treatment a therapeutically effective amount of at least one of the compounds of the present invention or a pharmaceutically acceptable salt form or prodrug form thereof.
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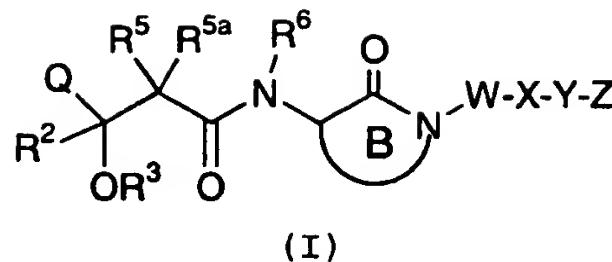
20 These and other objects, which will become apparent during the following detailed description, have been achieved by the inventors' discovery that compounds of Formula (I):



or pharmaceutically acceptable salt form or prodrug forms thereof, wherein Q, R², R³, R⁵, R^{5a}, R⁶, B, W, X, Y, and Z are defined below, are effective inhibitors of the
 30 production of A β .

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Thus, in a first embodiment, the present invention provides a novel compound of Formula (I):



5 or a pharmaceutically acceptable salt form or prodrug thereof, wherein:

Q is Q¹,

(C₁-C₃ alkyl)-O-Q¹,

10 (C₁-C₃ alkyl)-S-Q¹,

(C₁-C₃ alkyl)-S(=O)-Q¹,

(C₁-C₃ alkyl)-S(=O)₂-Q¹, or

(C₁-C₃ alkyl)-N(R²⁰)-Q¹;

15 Q¹ is C₁-C₈ alkyl substituted with 0-3 R^{1a};

C₂-C₈ alkenyl substituted with 0-3 R^{1a};

C₂-C₈ alkynyl substituted with 0-3 R^{1a};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

20 C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or

5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

25

R^{1a}, at each occurrence, is independently selected from H, C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and

30 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and

sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H,
5 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and (C₁-C₆ alkyl)-O-C(=O)-;

10 R² is H, methyl, ethyl, propyl, or butyl;

R³ is H, C₁-C₆ alkyl, -C(=O)(C₁-C₆ alkyl), -C(=S)(C₁-C₆ alkyl), or -C(=O)NR²¹R²²;

15 alternatively, R² and OR³ are combined to form C=O or C=N-OH;

R⁵ is H, OR¹⁴;
C₁-C₆ alkyl substituted with 0-3 R^{5b};

20 C₁-C₆ alkoxy substituted with 0-3 R^{5b};
C₂-C₆ alkenyl substituted with 0-3 R^{5b};
C₂-C₆ alkynyl substituted with 0-3 R^{5b};
C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};
25 C₆-C₁₀ aryl substituted with 0-3 R^{5c}; or
5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3R^{5c};

30 R^{5a} is H, C₁-C₄ alkyl, or C₂-C₄ alkenyl;

alternatively, R⁵ and R^{5a} may be combined to form a 3-7 membered cycloalkyl ring substituted with 0-3 R^{5c};

35 optionally the cycloalkyl ring formed by combining R⁵

and R^{5a} may be benzo fused, wherein the benzo fused ring may be substituted with 0-3 R^{5c};

R^{5b}, at each occurrence, is independently selected from:

- 5 H, C₁-C₆ alkyl, CF₃, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};
- 10 C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};
- C₆-C₁₀ aryl substituted with 0-3 R^{5c}; and
- 15 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R⁶ is H or C₁-C₆ alkyl;

W is -(CR⁸R^{8a})_p-;

- 25 p is 0, 1, 2, 3, or 4;

R⁸ and R^{8a}, at each occurrence, are independently selected from H, F, C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl and C₃-C₈ cycloalkyl;

X is a bond;

- C₆-C₁₀ aryl substituted with 0-3 R^{Xb};
- C₃-C₁₀ cycloalkyl substituted with 0-3 R^{Xb};
- 35 C₃-C₁₀ carbocycle substituted with 0-3 R^{Xb}; or
- 5 to 10 membered heterocycle substituted with 0-2 R^{Xb};

R^{Xb} , at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

5

Y is a bond or -(CR⁹R^{9a})_t-V-(CR⁹R^{9a})_u-;

t is 0, 1, 2, or 3;

10 u is 0, 1, 2, or 3;

R⁹ and R^{9a}, at each occurrence, are independently selected from H, F, C₁-C₆ alkyl or C₃-C₈ cycloalkyl;

15 V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-,
 -N(R¹⁹)-, -C(=O)NR^{19b}-, -NR^{19b}C(=O)-, -NR^{19b}S(=O)₂-,
 -S(=O)₂NR^{19b}-, -C(=O)O-, or -OC(=O)-;

Z is H;

20 C₁-C₈ alkyl substituted with 0-2 R¹²;
 C₂-C₄ alkenyl substituted with 0-2 R¹²;
 C₂-C₄ alkynyl substituted with 0-2 R¹²;
 C₆-C₁₀ aryl substituted with 0-4 R^{12b};
 C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or
 25 5 to 10 membered heterocycle containing 1 to 4
 heteroatoms selected from nitrogen, oxygen, and
 sulphur, wherein said 5 to 10 membered
 heterocycle is substituted with 0-3 R^{12b};

30 Ring B is a 6, 7, or 8 membered lactam,
 wherein the lactam is saturated, partially saturated
 or unsaturated;
 wherein each additional lactam carbon is substituted
 with 0-2 R¹¹; and,

optionally, the lactam contains a heteroatom selected from -N=, -NH-, -N(R¹⁰)-, -O-, -S-, -S(=O)-, and -S(=O)₂-;

5 additionally, two R¹¹ substituents on adjacent atoms may be combined to form C₃-C₆ carbocycle fused radical, a benzo fused radical, or a 5 to 6 membered heteroaryl fused radical,

10 wherein said 5 to 6 membered heteroaryl fused radical comprises 1-2 heteroatoms selected from N, O, and S; wherein said benzo fused radical or 5 to 6 membered heteroaryl fused radical is substituted with 0-3 R¹³;

R¹⁰ is H, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹,
15 S(=O)₂R¹⁷;

C₁-C₆ alkyl substituted with 0-2 R^{10a};
C₆-C₁₀ aryl substituted with 0-4 R^{10b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{10b}; or
20 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is optionally substituted with 0-3 R^{10b};

25 R^{10a}, at each occurrence, is independently selected from H, C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, CF₃;

aryl substituted with 0-4 R^{10b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{10b}; or
30 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is optionally substituted with 0-3 R^{10b};

R^{10b}, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

5

R¹¹, at each occurrence, is independently selected from H, C₁-C₄ alkoxy, Cl, F, Br, I, =O, CN, NO₂, NR¹⁸R¹⁹, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹, 10 CF₃;

15 C₁-C₆ alkyl substituted with 0-1 R^{11a};

C₆-C₁₀ aryl substituted with 0-3 R^{11b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{11b};

20 R^{11a}, at each occurrence, is independently selected from H, C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, CF₃;

phenyl substituted with 0-3 R^{11b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or 25 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{11b};

R^{11b}, at each occurrence, is independently selected from H, 30 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

35 R¹² at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃,

acetyl, SCH_3 , $\text{S}(=\text{O})\text{CH}_3$, $\text{S}(=\text{O})_2\text{CH}_3$, $\text{C}_1\text{-}\text{C}_6$ alkyl, $\text{C}_1\text{-}\text{C}_4$ alkoxy, $\text{C}_1\text{-}\text{C}_4$ haloalkyl, $\text{C}_1\text{-}\text{C}_4$ haloalkoxy, and $\text{C}_1\text{-}\text{C}_4$ haloalkyl-S-;

5 $\text{C}_6\text{-}\text{C}_{10}$ aryl substituted with 0-4 $\text{R}^{12\text{b}}$;

5 $\text{C}_3\text{-}\text{C}_{10}$ carbocycle substituted with 0-4 $\text{R}^{12\text{b}}$; or

5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 $\text{R}^{12\text{b}}$;

10 $\text{R}^{12\text{b}}$, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO_2 , $\text{NR}^{15}\text{R}^{16}$, CF_3 , acetyl, SCH_3 , $\text{S}(=\text{O})\text{CH}_3$, $\text{S}(=\text{O})_2\text{CH}_3$, $\text{C}_1\text{-}\text{C}_6$ alkyl, $\text{C}_1\text{-}\text{C}_4$ alkoxy, $\text{C}_1\text{-}\text{C}_4$ haloalkyl, $\text{C}_1\text{-}\text{C}_4$ haloalkoxy, and $\text{C}_1\text{-}\text{C}_4$ haloalkyl-S-;

15 R^{13} , at each occurrence, is independently selected from H, OH, $\text{C}_1\text{-}\text{C}_6$ alkyl, $\text{C}_1\text{-}\text{C}_4$ alkoxy, Cl, F, Br, I, CN, NO_2 , $\text{NR}^{15}\text{R}^{16}$, and CF_3 ;

20 R^{14} , at each occurrence, is independently selected from H, phenyl, benzyl, $\text{C}_1\text{-}\text{C}_6$ alkyl, and $\text{C}_2\text{-}\text{C}_6$ alkoxyalkyl;

$\text{R}^{14\text{a}}$ is H, phenyl, benzyl, or $\text{C}_1\text{-}\text{C}_6$ alkyl;

25 R^{15} , at each occurrence, is independently selected from H, $\text{C}_1\text{-}\text{C}_6$ alkyl, phenyl, benzyl, phenethyl, ($\text{C}_1\text{-}\text{C}_6$ alkyl)- $\text{C}(=\text{O})$ -, ($\text{C}_1\text{-}\text{C}_6$ alkyl)- $\text{O-C}(=\text{O})$ - and ($\text{C}_1\text{-}\text{C}_6$ alkyl)- $\text{S}(=\text{O})_2$ -;

30 R^{16} , at each occurrence, is independently selected from H, OH, $\text{C}_1\text{-}\text{C}_6$ alkyl, phenyl, benzyl, phenethyl, ($\text{C}_1\text{-}\text{C}_6$ alkyl)- $\text{C}(=\text{O})$ -, ($\text{C}_1\text{-}\text{C}_6$ alkyl)- $\text{O-C}(=\text{O})$ - and ($\text{C}_1\text{-}\text{C}_6$ alkyl)- $\text{S}(=\text{O})_2$ -;

alternatively, $-NR^{15}R^{16}$ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl;

5

R^{17} is H, C_1-C_6 alkyl, or C_2-C_6 alkoxyalkyl, aryl substituted by 0-4 R^{17a} , or aryl- CH_2- wherein said aryl is substituted by 0-4 R^{17a} ;

10

R^{17a} is H, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, butoxy, -OH, F, Cl, Br, I, CF_3 , OCF_3 , SCH_3 , $S(=O)CH_3$, $S(=O)_2CH_3$, -NH₂, -N(CH₃)₂, or C_1-C_4 haloalkyl;

15

R^{18} , at each occurrence, is independently selected from H, C_1-C_6 alkyl, phenyl, benzyl, phenethyl, (C_1-C_6 alkyl)-C(=O)- and (C_1-C_6 alkyl)-S(=O)₂-;

20 alternatively, $-NR^{17}R^{18}$ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl;

25 R^{19} , at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, phenyl, benzyl, phenethyl, (C_1-C_6 alkyl)-C(=O)- and (C_1-C_6 alkyl)-S(=O)₂-;

30 R^{19b} , at each occurrence, is independently selected from H and C_1-C_6 alkyl;

R^{20} is H, OH, C_1-C_4 alkyl, phenyl, benzyl, or phenethyl;

35 R^{21} , at each occurrence, is independently selected from H, C_1-C_6 alkyl, phenyl, benzyl, and phenethyl; and

R²², at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, and phenethyl.

[2] In a preferred embodiment the present invention
5 provides a compound of Formula (I) wherein:

Q is Q¹,

(C₁-C₃ alkyl)-O-Q¹,

(C₁-C₃ alkyl)-S-Q¹,

10 (C₁-C₃ alkyl)-S(=O)-Q¹,

(C₁-C₃ alkyl)-S(=O)₂-Q¹, or

(C₁-C₃ alkyl)-N(R²⁰)-Q¹;

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

15 C₂-C₆ alkenyl substituted with 0-3 R^{1a};

C₂-C₆ alkynyl substituted with 0-3 R^{1a};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or

20 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{1b};

25 R^{1a}, at each occurrence, is independently selected from H,
C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and

30 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and
5 (C₁-C₆ alkyl)-O-C(=O)-;

R² is H, methyl, ethyl, propyl, or butyl;

R³ is H, C₁-C₄ alkyl, -C(=O)(C₁-C₄ alkyl), -C(=S)(C₁-C₄
10 alkyl), or -C(=O)NR²¹R²²;

R⁵ is H, OR¹⁴;

C₁-C₆ alkyl substituted with 0-3 R^{5b};
C₁-C₆ alkoxy substituted with 0-3 R^{5b};
15 C₂-C₆ alkenyl substituted with 0-3 R^{5b};
C₂-C₆ alkynyl substituted with 0-3 R^{5b};
C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};
C₆-C₁₀ aryl substituted with 0-3 R^{5c}; or
20 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3R^{5c};

25 R^{5a} is H, C₁-C₄ alkyl, or C₂-C₄ alkenyl;

alternatively, R⁵ and R^{5a} may be combined to form a 3-7
membered cycloalkyl ring substituted with 0-3 R^{5c};

30 R^{5b}, at each occurrence, is independently selected from:
H, C₁-C₆ alkyl, CF₃, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂,
NR¹⁵R¹⁶, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₂-C₆
alkenyl, C₂-C₆ alkynyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and
35 C₁-C₄ haloalkyl-S-,
C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};

C₆-C₁₀ aryl substituted with 0-3 R^{5c}; and
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R⁶ is H, methyl, or ethyl;

W is -(CR⁸R^{8a})_p-;

p is 0, 1, or 2;

R⁸ and R^{8a}, at each occurrence, are independently selected
from H, F, methyl, and ethyl;

X is a bond;
phenyl substituted with 0-3 R^{Xb};
C₃-C₆ cycloalkyl substituted with 0-3 R^{Xb}; or
5 to 6 membered heterocycle substituted with 0-2 R^{Xb};

R^{Xb}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

Y is a bond or -(CR⁹R^{9a})_t-V-(CR⁹R^{9a})_u-;

t is 0, 1, or 2;

u is 0, 1, or 2;

R⁹ and R^{9a}, at each occurrence, are independently selected from H, F, methyl, and ethyl;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-,
5 -N(R¹⁹)-, -C(=O)NH-, -NHC(=O)-, -NHS(=O)₂-, or
-S(=O)₂NH-;

Z is H, halo;

C₁-C₄ alkyl substituted with 0-2 R¹²;
10 C₂-C₄ alkenyl substituted with 0-2 R¹²;
C₂-C₄ alkynyl substituted with 0-2 R¹²;
C₆-C₁₀ aryl substituted with 0-4 R^{12b};
C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or
15 5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};

Ring B is a 7 membered lactam,
20 wherein the lactam is saturated, partially saturated
or unsaturated;
wherein each additional lactam carbon is substituted
with 0-2 R¹¹; and,
optionally, the lactam contains a heteroatom selected
25 from -N=, -NH-, -N(R¹⁰)-, -O-, -S-, -S(=O)-, and
-S(=O)₂-;

additionally, two R¹¹ substituents on adjacent atoms may be
combined to form C₃-C₆ carbocycle fused radical, a
30 benzo fused radical, or a 5 to 6 membered heteroaryl
fused radical,
wherein said 5 to 6 membered heteroaryl fused radical
comprises 1-2 heteroatoms selected from N, O, and S;
wherein said benzo fused radical or 5 to 6 membered
35 heteroaryl fused radical is substituted with 0-3 R¹³;

R¹⁰ is H, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹, S(=O)₂R¹⁷;

C₁-C₆ alkyl substituted with 0-2 R^{10a};

C₆-C₁₀ aryl substituted with 0-4 R^{10b};

5 C₃-C₁₀ carbocycle substituted with 0-3 R^{10b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is optionally substituted with 0-3
10 R^{10b};

R^{10a}, at each occurrence, is independently selected from H,
C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶,
CF₃, or aryl substituted with 0-4 R^{10b};

15 R^{10b}, at each occurrence, is independently selected from H,
OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂,
NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆
alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy,
20 and C₁-C₄ haloalkyl-S-;

R¹¹, at each occurrence, is independently selected from H,
C₁-C₄ alkoxy, Cl, F, Br, I, =O, CN, NO₂, NR¹⁸R¹⁹,
C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹,
25 CF₃;

C₁-C₆ alkyl substituted with 0-1 R^{11a};
C₆-C₁₀ aryl substituted with 0-3 R^{11b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or
5 to 10 membered heterocycle containing 1 to 4
30 heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{11b};

R^{11a}, at each occurrence, is independently selected from H, C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, CF₃;

5 phenyl substituted with 0-3 R^{11b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{11b};

10 R^{11b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

15 R¹² at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃,
acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄
alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄
haloalkyl-S-;

20 C₆-C₁₀ aryl substituted with 0-4 R^{12b};
C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
25 sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{12b};

30 R^{12b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

35 R¹³, at each occurrence, is independently selected from H,
OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂,
NR¹⁵R¹⁶, and CF₃;

R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, C₁-C₆ alkyl, and C₂-C₆ alkoxyalkyl;

5 R¹⁵, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

10 R¹⁶, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

15 alternatively, -NR¹⁵R¹⁶ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperazinyl;

20 R¹⁷ is H, aryl, aryl-CH₂-, C₁-C₆ alkyl, or C₂-C₆ alkoxyalkyl;

25 R¹⁸, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

30 R¹⁹, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

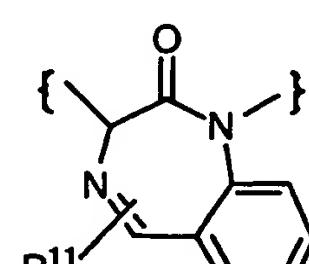
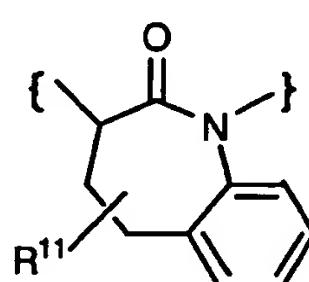
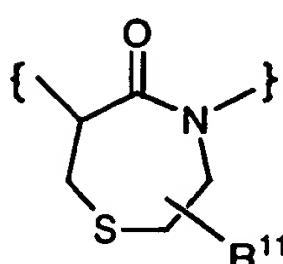
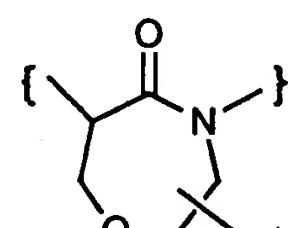
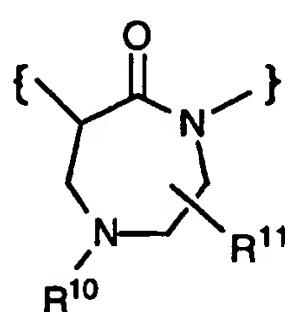
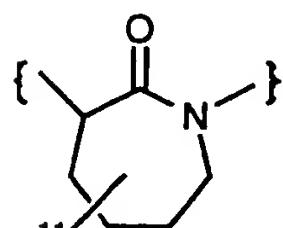
35 alternatively, -NR¹⁷R¹⁸ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperazinyl;

35 R²⁰ is H, OH, C₁-C₄ alkyl, phenyl, benzyl, or phenethyl;

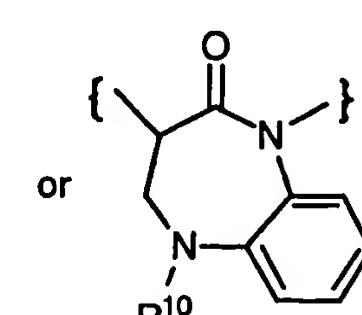
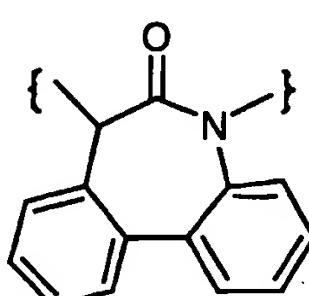
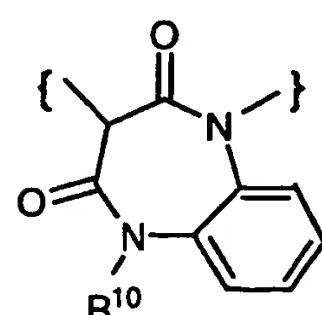
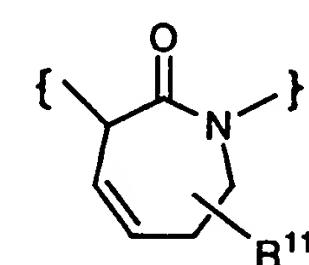
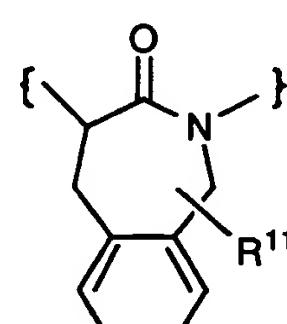
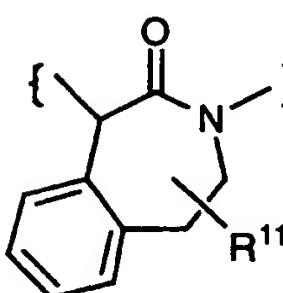
R^{21} , at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, and phenethyl; and

5 R^{22} , at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, and phenethyl.

[2] In a preferred embodiment the present invention provides a compound of Formula (I) wherein Ring B is
10 selected from:

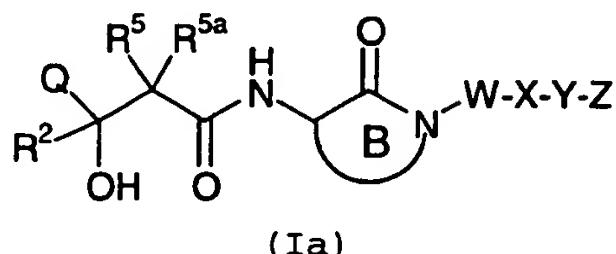


15



wherein each benzo fused radical is substituted with 0-3 R¹³.

5 [4] In a preferred embodiment the present invention provides a compound of Formula (Ia):



or a pharmaceutically acceptable salt form or prodrug

10 thereof, wherein:

Q is Q¹,

(C₁-C₃ alkyl)-O-Q¹,

(C₁-C₃ alkyl)-S-Q¹,

15 (C₁-C₃ alkyl)-S(=O)-Q¹,

(C₁-C₃ alkyl)-S(=O)₂-Q¹, or

(C₁-C₃ alkyl)-N(R²⁰)-Q¹;

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

20 C₂-C₆ alkenyl substituted with 0-3 R^{1a};

C₂-C₆ alkynyl substituted with 0-3 R^{1a};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or

25 5 to 10 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

30 R^{1a}, at each occurrence, is independently selected from H,

C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and
(C₁-C₆ alkyl)-O-C(=O)-;

R² is H, methyl, or ethyl;

15 R⁵ is H, OR¹⁴;
C₁-C₆ alkyl substituted with 0-3 R^{5b};
C₁-C₆ alkoxy substituted with 0-3 R^{5b};
C₂-C₆ alkenyl substituted with 0-3 R^{5b};
C₂-C₆ alkynyl substituted with 0-3 R^{5b};
20 C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};
C₆-C₁₀ aryl substituted with 0-3 R^{5c}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
25 sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3R^{5c};

R^{5a} is H, C₁-C₄ alkyl, or C₂-C₄ alkenyl;

30 alternatively, R⁵ and R^{5a} may be combined to form a 3-7
membered cycloalkyl ring substituted with 0-3 R^{5c};

R^{5b}, at each occurrence, is independently selected from:
H, C₁-C₆ alkyl, CF₃, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂,
35 NR¹⁵R¹⁶, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₂-C₆

alkenyl, C₂-C₆ alkynyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-,

5 C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};
 C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};
 C₆-C₁₀ aryl substituted with 0-3 R^{5c}; and
 10 5 to 10 membered heterocycle containing 1 to 4
 heteroatoms selected from nitrogen, oxygen, and
 sulphur, wherein said 5 to 10 membered
 heterocycle is substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H,
 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
 S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
 15 haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

W is -(CR⁸R^{8a})_p-;

p is 0, 1, or 2;

20 R⁸ and R^{8a}, at each occurrence, are independently selected
 from H, F, methyl, and ethyl;

X is a bond;

25 phenyl substituted with 0-3 R^{Xb};
 C₃-C₆ cycloalkyl substituted with 0-3 R^{Xb}; or
 5 to 6 membered heterocycle containing 1 to 3
 heteroatoms selected from nitrogen, oxygen, and
 sulphur, wherein said 5 to 6 membered heterocycle
 30 is substituted with 0-2 R^{Xb};

R^{Xb}, at each occurrence, is independently selected from H,
 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
 S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
 35 haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

Y is a bond or -(CR⁹R^{9a})_t-V-(CR⁹R^{9a})_u-;

t is 0, 1, or 2;

u is 0, 1, or 2;

5

R⁹ and R^{9a}, at each occurrence, are independently selected from H, F, methyl, and ethyl;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-,
10 -N(R¹⁹)-, -C(=O)NH-, or -NHC(=O)-;

Z is H, halo;

C₁-C₄ alkyl substituted with 0-2 R¹²;

C₂-C₄ alkenyl substituted with 0-2 R¹²;

15

C₂-C₄ alkynyl substituted with 0-2 R¹²;

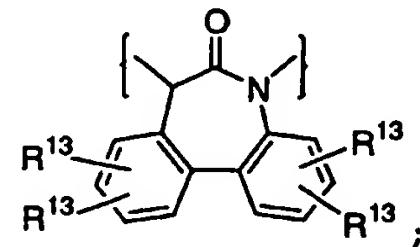
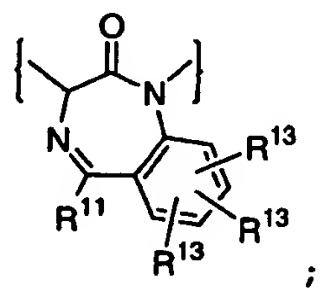
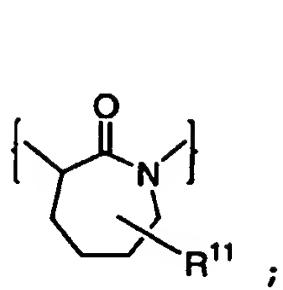
C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};

20

Ring B is selected from:



25

R¹¹, at each occurrence, is independently selected from H,
C₁-C₄ alkoxy, Cl, F, Br, I, =O, CN, NO₂, NR¹⁸R¹⁹,

C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹,

30

CF₃;

C₁-C₆ alkyl substituted with 0-1 R^{11a};

C₆-C₁₀ aryl substituted with 0-3 R^{11b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
5 sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{11b};

R^{11a}, at each occurrence, is independently selected from H,
C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶,
10 CF₃;
phenyl substituted with 0-3 R^{11b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or
15 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{11b};

R^{11b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
20 S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R¹² at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃,
25 acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄
alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄
haloalkyl-S-;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};
C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or
30 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{12b};

R^{12b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

5

R¹³, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, and CF₃;

10 R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, C₁-C₆ alkyl, and C₂-C₆ alkoxyalkyl;

15 R¹⁵, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

20 R¹⁶, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

25 alternatively, -NR¹⁵R¹⁶ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl;

30 R¹⁷ is H, aryl, aryl-CH₂-, C₁-C₆ alkyl, or C₂-C₆ alkoxyalkyl;

R¹⁸, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

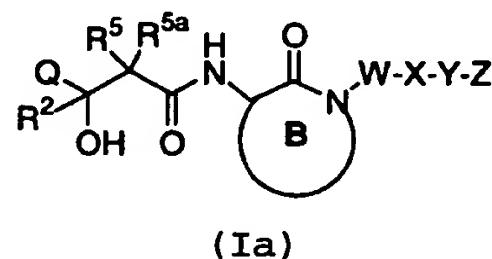
R^{19} , at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

5 alternatively, -NR¹⁸R¹⁹ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl; and

10 R²⁰ is H, OH, C₁-C₄ alkyl, phenyl, benzyl, or phenethyl.

[5] In a preferred embodiment the present invention provides a compound of Formula (Ia):

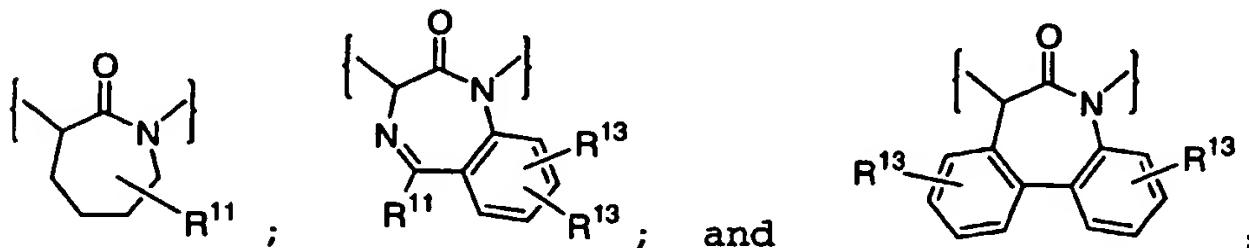
15



wherein:

Ring B is selected from:

20



Q is Q¹ or (C₁-C₃ alkyl)-O-Q¹;

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

25 C₂-C₆ alkenyl substituted with 0-3 R^{1a};

C₂-C₆ alkynyl substituted with 0-3 R^{1a};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or

5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

5

R^{1a}, at each occurrence, is independently selected from H, C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and

10

5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

15

R^{1b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and (C₁-C₆ alkyl)-O-C(=O)-;

20

R² is H, methyl, or ethyl;

R⁵ is H, OR¹⁴;

C₁-C₆ alkyl substituted with 0-3 R^{5b};

25

C₂-C₆ alkenyl substituted with 0-3 R^{5b};

C₂-C₆ alkynyl substituted with 0-3 R^{5b};

C₃-C₆ cycloalkyl substituted with 0-3 R^{5c};

C₃-C₆ carbocycle substituted with 0-3 R^{5c};

phenyl substituted with 0-3 R^{5c}; or

30

5 to 7 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3R^{5c};

35 R^{5a} is H, C₁-C₄ alkyl, or C₂-C₄ alkenyl;

alternatively, R⁵ and R^{5a} may be combined to form a C₄-C₇ cycloalkyl ring;

R^{5b}, at each occurrence, is independently selected from:

5 H, C₁-C₆ alkyl, CF₃, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-,

10 C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c}; C₃-C₁₀ carbocycle substituted with 0-3 R^{5c}; C₆-C₁₀ aryl substituted with 0-3 R^{5c}; and 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and 15 sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{5c};

20 R^{5c}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

W is -(CR⁸R^{8a})_p-;

25 p is 0, 1, or 2;

R⁸ and R^{8a}, at each occurrence, are independently selected from H, methyl, and ethyl;

30 X is a bond;

phenyl substituted with 0-3 RX^b;

C₃-C₆ cyclolakyl substituted with 0-3 RX^b; or

35 5 to 6 membered heterocycle containing 1 to 3 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-2 RX^b;

R^{Xb}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

5

Y is a bond or -(CR⁹R^{9a})_t-V-(CR⁹R^{9a})_u-;

t is 0, 1, or 2;

10 u is 0, 1, or 2;

R⁹ and R^{9a}, at each occurrence, are independently selected from H, F, methyl, and ethyl;

15 V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, -N(R¹⁹)-, -NHC(=O)-, or -C(=O)NH-;

Z is H, F, Cl, Br;

C₁-C₄ alkyl substituted with 0-2 R¹²;

20 C₂-C₄ alkenyl substituted with 0-2 R¹²;

C₂-C₄ alkynyl substituted with 0-2 R¹²;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

25 5 to 6 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and

sulphur, wherein said 5 to 6 membered heterocycle

is substituted with 0-3 R^{12b};

R¹¹, at each occurrence, is independently selected from

30 H, =O, NR¹⁸R¹⁹, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹,

S(=O)₂NR¹⁸R¹⁹, CF₃;

C₁-C₆ alkyl substituted with 0-1 R^{11a};

phenyl substituted with 0-3 R^{11b};

C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b};

5

R^{11a}, at each occurrence, is independently selected from H, C₁-C₄ alkyl, OR¹⁴, Cl, F, Br, =O, CN, NO₂, NR¹⁵R¹⁶, CF₃;

phenyl substituted with 0-3 R^{11b};

10

C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b};

15

R^{11b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

20

R¹² at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

25

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or

30

5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{12b};

R^{12b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,

$S(=O)CH_3$, $S(=O)_2CH_3$, C_1-C_6 alkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkyl, C_1-C_4 haloalkoxy, and C_1-C_4 haloalkyl-S-;

5 R^{13} , at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, C_1-C_4 alkoxy, Cl, F, Br, I, CN, NO_2 , $NR^{15}R^{16}$, and CF_3 ;

10 R^{14} , at each occurrence, is independently selected from H, phenyl, benzyl, C_1-C_6 alkyl, and C_2-C_6 alkoxyalkyl;

15 R^{15} , at each occurrence, is independently selected from H, C_1-C_6 alkyl, phenyl, benzyl, phenethyl, (C_1-C_6 alkyl)-C(=O)-, (C_1-C_6 alkyl)-O-C(=O)- and (C_1-C_6 alkyl)-S(=O)₂-;

20 R^{16} , at each occurrence, is independently selected from H, OH, C_1-C_6 alkyl, phenyl, benzyl, phenethyl, (C_1-C_6 alkyl)-C(=O)-, (C_1-C_6 alkyl)-O-C(=O)- and (C_1-C_6 alkyl)-S(=O)₂-;

25 alternatively, $-NR^{15}R^{16}$ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperazinyl; and

30 R^{17} is H, aryl, aryl-CH₂-, C_1-C_6 alkyl, or C_2-C_6 alkoxyalkyl;

35 R^{18} , at each occurrence, is independently selected from H, C_1-C_6 alkyl, phenyl, benzyl, phenethyl, (C_1-C_6 alkyl)-C(=O)- and (C_1-C_6 alkyl)-S(=O)₂-;

40 alternatively, $-NR^{18}R^{19}$ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl,

thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperazinyl; and

5 R¹⁹, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl.

[5] In a preferred embodiment the present invention provides a compound of Formula (Ia) wherein:

10

Q is Q¹;

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

C₂-C₆ alkenyl substituted with 0-3 R^{1a};

15

C₂-C₆ alkynyl substituted with 0-3 R^{1a};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or

20 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

25 R^{1a}, at each occurrence, is independently selected from H, C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃; C₃-C₁₀ carbocycle substituted with 0-3 R^{1b}; C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and 30 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

35 R^{1b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄

haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and
(C₁-C₆ alkyl)-O-C(=O)-;

R² is H, methyl, or ethyl;

5

R⁵ is H, OR¹⁴;

C₁-C₆ alkyl substituted with 0-3 R^{5b};

C₂-C₆ alkenyl substituted with 0-3 R^{5b}; or

C₂-C₆ alkynyl substituted with 0-3 R^{5b};

10

R^{5a} is H, methyl, ethyl, propyl, butyl, or C₂-C₄ alkenyl;

alternatively, R⁵ and R^{5a} may be combined to form a C₄-C₇ cycloalkyl ring;

15

R^{5b}, at each occurrence, is independently selected from:

H, methyl, ethyl, propyl, butyl, CF₃, OR¹⁴, Cl, F, Br,

I, =O, NR¹⁵R¹⁶,

C₃-C₇ cycloalkyl substituted with 0-3 R^{5c};

20

C₃-C₇ carbocycle substituted with 0-3 R^{5c};

phenyl substituted with 0-3 R^{5c}; and

5 to 7 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle

25

is substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₄ alkyl, C₁-C₃ alkoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

30

W is -(CHR⁸)_p-;

p is 0 or 1;

35

R⁸ is H, methyl, or ethyl;

X is a bond;
phenyl substituted with 0-2 R^{Xb};
C₅-C₆ cycloalkyl substituted with 0-3 R^{Xb}; or
5 to 6 membered heterocycle containing 1 to 3
5 heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-2 R^{Xb};

R^{Xb}, at each occurrence, is independently selected from H,
10 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

Y is a bond, -V-, -CH₂-V-, -V-CH₂-, or -CH₂-V-CH₂-;

15 V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, or
-N(R¹⁹)-;

Z is H, F, Cl, Br,

20 C₁-C₄ alkyl substituted with 0-2 R¹²;
C₂-C₄ alkenyl substituted with 0-2 R¹²;
C₂-C₄ alkynyl substituted with 0-2 R¹²;
C₆-C₁₀ aryl substituted with 0-4 R^{12b};
C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

25 5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};

30 R¹¹, at each occurrence, is independently selected from
H, =O, NR¹⁸R¹⁹, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹,
S(=O)₂NR¹⁸R¹⁹, CF₃;
C₁-C₆ alkyl substituted with 0-1 R^{11a};
phenyl substituted with 0-3 R^{11b};

35 C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;

R^{11a}, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, Cl, F, =O, NR¹⁵R¹⁶, CF₃; phenyl substituted with 0-3 R^{11b};

C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or 5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;

R^{11b}, at each occurrence, is independently selected from H, OH, Cl, F, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

R¹² at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄

alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or

5 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{12b};

10 R^{12b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

15 R¹³, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, and CF₃;

20 R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, C₁-C₄ alkyl, and C₂-C₄ alkoxyalkyl;

25 R¹⁵, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl;

30 R¹⁶, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl, phenethyl, CH₃CH₂C(=O)-, CH₃C(=O)-, CH₃CH₂OC(=O)-, CH₃OC(=O)-, CH₃CH₂S(=O)₂- and CH₃S(=O)₂-;

35 R¹⁷ is H, phenyl, benzyl, C₁-C₄ alkyl, or C₂-C₄ alkoxyalkyl;

R¹⁸, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl; and

R^{19} , at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, and butyl.

5 [7] In a preferred embodiment the present invention provides a compound of Formula (Ia) wherein:

Q is Q^1 ,

- 10 Q^1 is C_1-C_6 alkyl substituted with 0-3 R^{1a} ;
 C_2-C_6 alkenyl substituted with 0-3 R^{1a} ;
 C_2-C_6 alkynyl substituted with 0-3 R^{1a} ;
 C_3-C_6 cycloalkyl substituted with 0-3 R^{1b} ;
phenyl substituted with 0-3 R^{1b} ; or
15 5 to 6 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-3 R^{1b} ;
- 20 R^{1a} , at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, OR^{14} , Cl, F, Br, I, $NR^{15}R^{16}$, CF_3 ;
 C_3-C_6 carbocycle substituted with 0-3 R^{1b} ;
phenyl substituted with 0-3 R^{1b} ; and
25 5 to 6 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-3 R^{1b} ;
- 30 R^{1b} , at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO_2 , $NR^{15}R^{16}$, CF_3 , acetyl, SCH_3 , $S(=O)CH_3$, $S(=O)_2CH_3$, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C_1-C_2 haloalkyl, C_1-C_2 haloalkoxy, $(methyl)OC(=O)-$, $(ethyl)OC(=O)-$,
35 $(propyl)OC(=O)-$, and $(butyl)OC(=O)-$;

R² is H or methyl;

R⁵ is H, OR¹⁴;

- 5 C₁-C₄ alkyl substituted with 0-1 R^{5b};
C₂-C₄ alkenyl substituted with 0-1 R^{5b}; or
C₂-C₄ alkynyl substituted with 0-1 R^{5b};

R^{5a} is H, methyl, ethyl, propyl, or butyl;

- 10 alternatively, R⁵ and R^{5a} may be combined to form a
cyclobutyl, cyclopentyl, cyclohexyl, or cycloheptyl
ring;

- 15 R^{5b}, at each occurrence, is independently selected from:
H, methyl, ethyl, propyl, butyl, CF₃, OR¹⁴, Cl, F,
=O, NR¹⁵R¹⁶,
C₃-C₇ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₇ carbocycle substituted with 0-3 R^{5c};
20 phenyl substituted with 0-3 R^{5c}; and
5 to 7 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 7 membered heterocycle
is substituted with 0-3 R^{5c}; wherein said 5 to 7
25 membered heterocycle is selected from pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl,
thiazolyl, pyrrolyl, piperazinyl, piperidinyl,
homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl,
isoxazolyl, and tetrazolyl;

- 30 R^{5c}, at each occurrence, is independently selected from H,
OH, Cl, F, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃,
S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy,
ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂
35 haloalkoxy;

W is a bond, -CH₂-, or -CH(CH₃)-;

X is a bond;
phenyl substituted with 0-1 R^{Xb};
C₅-C₆ cycloalkyl substituted with 0-1 R^{Xb}; or
5 5 to 6 membered heterocycle containing 1 to 3
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-1 R^{Xb}; wherein said 5 to 6
membered heterocycle is selected from pyridinyl,
10 pyrimidinyl, triazinyl, furanyl, thieryl,
thiazolyl, pyrrolyl, piperazinyl, piperidinyl,
pyrazolyl, imidazolyl, oxazolyl, and isoxazolyl;

R^{Xb}, at each occurrence, is independently selected from
15 H, OH, Cl, F, Br, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃,
S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy,
ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂
haloalkoxy;

20 Y is a bond, -V-, -V-CH₂-, or -CH₂V-;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, or
-N(R¹⁹) -;

25 Z is H, F, Cl, Br,
C₁-C₄ alkyl substituted with 0-2 R¹²;
C₂-C₄ alkenyl substituted with 0-2 R¹²;
C₂-C₄ alkynyl substituted with 0-2 R¹²;
C₆-C₁₀ aryl substituted with 0-4 R^{12b};
30 C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or
5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};

R¹¹, at each occurrence, is independently selected from H, NR¹⁸R¹⁹, CF₃;

C₁-C₄ alkyl substituted with 0-1 R^{11a};

phenyl substituted with 0-3 R^{11b};

5 C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, 10 pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;

15 R^{11a}, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, Cl, F, =O, NR¹⁵R¹⁶, CF₃;

phenyl substituted with 0-3 R^{11b};

20 C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, 25 pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;

30 R^{11b}, at each occurrence, is independently selected from H, OH, Cl, F, NR¹⁵R¹⁶, CF₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

- R¹² at each occurrence, is independently selected from H,
OH, Cl, F, Br, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃, acetyl,
SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl,
butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and
5 C₁-C₂ haloalkoxy;
phenyl substituted with 0-4 R^{12b};
C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or
10 5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};
- R^{12b}, at each occurrence, is independently selected from
H, OH, Cl, F, Br, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃,
15 S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy,
ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂
haloalkoxy;
- R¹³, at each occurrence, is independently selected from H,
20 OH, methyl, ethyl, propyl, butyl, methoxy, ethoxy,
propoxy, Cl, F, Br, CN, NR¹⁵R¹⁶, and CF₃;
- R¹⁴, at each occurrence, is independently selected from H,
phenyl, benzyl, methyl, ethyl, propyl, and butyl;
25
- R¹⁵, at each occurrence, is independently selected from H,
methyl, ethyl, propyl, or butyl;
- R¹⁶, at each occurrence, is independently selected from H,
30 OH, methyl, ethyl, propyl, butyl, phenyl, benzyl, and
phenethyl;
- R¹⁸, at each occurrence, is independently selected from H,
methyl, ethyl, propyl, butyl, phenyl, benzyl and,
35 phenethyl; and

R¹⁹, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl and, phenethyl.

5 [8] In a preferred embodiment the present invention provides a compound of Formula (Ia) wherein:

Q is -CH₃, -CH₂CH₃, -CH₂CH₂CH₃, -CH₂CH₂CH₂CH₃,
-CH₂CH₂CH₂CH₂CH₃, -CH₂CH₂CH₂CH₂CH₂CH₃, -CH(CH₃)₂,
10 -CH(CH₃)CH₂CH₃, -CH₂CH(CH₃)₂, -CH₂C(CH₃)₃,

-CF₃, -CH₂CF₃, -CH₂CH₂CF₃, -CH₂CH₂CH₂CF₃,

-CH=CH₂, -CH₂CH=CH₂, -CH₂C(CH₃)=CH₂, -CH₂CH=C(CH₃)₂,
15 -CH₂CH₂CH=CH₂, -CH₂CH₂C(CH₃)=CH₂, -CH₂CH₂CH=C(CH₃)₂,
cis-CH₂CH=CH(CH₃), cis-CH₂CH₂CH=CH(CH₃),
trans-CH₂CH=CH(CH₃), trans-CH₂CH₂CH=CH(CH₃);

-C≡CH, -CH₂C≡CH, -CH₂C≡C(CH₃),
20 cyclopropyl-, cyclobutyl-, cyclopentyl-, cyclohexyl-,
cyclopropyl-CH₂-, cyclobutyl-CH₂-, cyclopentyl-CH₂-,
cyclohexyl-CH₂-, cyclopropyl-CH₂CH₂-, cyclobutyl-CH₂CH₂-,
cyclopentyl-CH₂CH₂-, cyclohexyl-CH₂CH₂-,
25 phenyl-, 2-F-phenyl-, 3-F-phenyl-, 4-F-phenyl-,
4-methoxyphenyl-, 4-ethoxyphenyl-, 4-propoxypheyl-,
phenyl-CH₂-, (2-F-phenyl)CH₂-, (3-F-phenyl)CH₂-,
(4-F-phenyl)CH₂-, (2-Cl-phenyl)CH₂-, (3-Cl-phenyl)CH₂-,
30 (4-Cl-phenyl)CH₂-,

(2,3-diF-phenyl)CH₂-, (2,4-diF-phenyl)CH₂-,
(2,5-diF-phenyl)CH₂-, (2,6-diF-phenyl)CH₂-,
(3,4-diF-phenyl)CH₂-, (3,5-diF-phenyl)CH₂-,
35 (2,3-diCl-phenyl)CH₂-, (2,4-diCl-phenyl)CH₂-,
(2,5-diCl-phenyl)CH₂-, (2,6-diCl-phenyl)CH₂-,
(3,4-diCl-phenyl)CH₂-, (3,5-diCl-phenyl)CH₂-,

(3-F-4-Cl-phenyl)CH₂- , (3-F-5-Cl-phenyl)CH₂- ,
 (3-Cl-4-F-phenyl)CH₂- ,

5 2-furanyl-CH₂- , 3-furanyl-CH₂- , 2-thienyl-CH₂- ,
 3-thienyl-CH₂- , 2-pyridyl-CH₂- , 3-pyridyl-CH₂- ,
 4-pyridyl-CH₂- , 1-imidazolyl-CH₂- , 2-oxazolyl-CH₂- ,
 4-oxazolyl-CH₂- , 5-oxazolyl-CH₂- , 3-isoxazolyl-CH₂- ,
 4-isoxazolyl-CH₂- , 5-isoxazolyl-CH₂- ,

10 phenyl-CH₂CH₂- , (2-F-phenyl)CH₂CH₂- ,
 (3-F-phenyl)CH₂CH₂- , (4-F-phenyl)CH₂CH₂- ,
 (2-Cl-phenyl)CH₂CH₂- , (3-Cl-phenyl)CH₂CH₂- ,
 (4-Cl-phenyl)CH₂CH₂- ,
 (2,3-diF-phenyl)CH₂CH₂- , (2,4-diF-phenyl)CH₂CH₂- ,
 15 (2,5-diF-phenyl)CH₂CH₂- , (2,6-diF-phenyl)CH₂CH₂- ,
 (3,4-diF-phenyl)CH₂CH₂- , (3,5-diF-phenyl)CH₂CH₂- ,
 (2,3-diCl-phenyl)CH₂CH₂- , (2,4-diCl-phenyl)CH₂CH₂- ,
 (2,5-diCl-phenyl)CH₂CH₂- , (2,6-diCl-phenyl)CH₂CH₂- ,
 (3,4-diCl-phenyl)CH₂CH₂- , (3,5-diCl-phenyl)CH₂CH₂- ,
 20 (3-F-4-Cl-phenyl)CH₂CH₂- , (3-F-5-Cl-phenyl)CH₂CH₂- ;

furanyl-CH₂CH₂- , thienyl-CH₂CH₂- , pyridyl-CH₂CH₂- ,
 1-imidazolyl-CH₂CH₂- , oxazolyl-CH₂CH₂- ,
 isoxazolyl-CH₂CH₂- , 3,5-dimethylisoxazol-4-yl-CH₂CH₂- ,
 25 phenyl-propyl- ;

benzyl-CH(NH₂)- , benzyl-CH(NHC(=O)-O-tBu)- ,
 benzyloxy-CH₂- , pyrrolidin-2-yl- , or
 3-t-butoxycarbonylpyrrolidin-2-yl- ;

30 R² is H or methyl;

R⁵ is -CH₃ , -CH₂CH₃ , -CH₂CH₂CH₃ , -CH(CH₃)₂ , -CH₂CH₂CH₂CH₃ ,
 -CH(CH₃)CH₂CH₃ , -CH₂CH(CH₃)₂ , -CH₂C(CH₃)₃ ,
 35 -CH₂CH₂CH₂CH₂CH₃ , -CH(CH₃)CH₂CH₂CH₃ , -CH₂CH(CH₃)CH₂CH₃ ,
 -CH₂CH₂CH(CH₃)₂ , -CH(CH₂CH₃)₂ ,
 -CF₃ , -CH₂CF₃ , -CH₂CH₂CF₃ , -CH₂CH₂CH₂CF₃ , -CH₂CH₂CH₂CH₂CF₃ ,

-CH=CH₂, -CH₂CH=CH₂, -CH₂CH₂CH=CH₂, -CH=CHCH₃,
 cis-CH₂CH=CH(CH₃), trans-CH₂CH=CH(CH₃),
 trans-CH₂CH=CH(C₆H₅), -CH₂CH=C(CH₃)₂, cis-CH₂CH=CHCH₂CH₃,
 5 trans-CH₂CH=CHCH₂CH₃, cis-CH₂CH₂CH=CH(CH₃), trans-
 CH₂CH₂CH=CH(CH₃), trans-CH₂CH=CHCH₂(C₆H₅),

 -C≡CH, -CH₂C≡CH, -CH₂C≡C(CH₃), -CH₂C≡C(C₆H₅),
 -CH₂CH₂C≡CH, -CH₂CH₂C≡C(CH₃), -CH₂CH₂C≡C(C₆H₅),
 10 -CH₂CH₂CH₂C≡CH, -CH₂CH₂CH₂C≡C(CH₃), -CH₂CH₂CH₂C≡C(C₆H₅),

 cyclopropyl-CH₂-, cyclobutyl-CH₂-, cyclopentyl-CH₂-,
 cyclohexyl-CH₂-, (2-CH₃-cyclopropyl)CH₂-,
 (3-CH₃-cyclobutyl)CH₂-, cyclopropyl-CH₂CH₂-,
 15 cyclobutyl-CH₂CH₂-, cyclopentyl-CH₂CH₂-,
 cyclohexyl-CH₂CH₂-, (2-CH₃-cyclopropyl)CH₂CH₂-,
 (3-CH₃-cyclobutyl)CH₂CH₂-,

 phenyl-CH₂-, (2-F-phenyl)CH₂-, (3-F-phenyl)CH₂-,
 20 (4-F-phenyl)CH₂-, (3,5-diF-phenyl)CH₂-, 2-furanyl-CH₂-,
 3-furanyl-CH₂-, 2-thienyl-CH₂-, 3-thienyl-CH₂-,
 2-pyridyl-CH₂-, 3-pyridyl-CH₂-,
 4-pyridyl-CH₂-, 1-imidazolyl-CH₂-, 2-oxazolyl-CH₂-,
 4-oxazolyl-CH₂-, 5-oxazolyl-CH₂-, 3-isoxazolyl-CH₂-,
 25 4-isoxazolyl-CH₂-, 5-isoxazolyl-CH₂-,

 phenyl-CH₂CH₂-, (2-F-phenyl)CH₂CH₂-, (3-F-phenyl)CH₂CH₂-,
 (4-F-phenyl)CH₂CH₂-, furanyl-CH₂CH₂-, thienyl-CH₂CH₂-,
 pyridyl-CH₂CH₂-, 1-imidazolyl-CH₂CH₂-, oxazolyl-CH₂CH₂-,
 30 isoxazolyl-CH₂CH₂;-

 methoxy, ethoxy, propoxy, or butoxy;

R^{5a} is H;

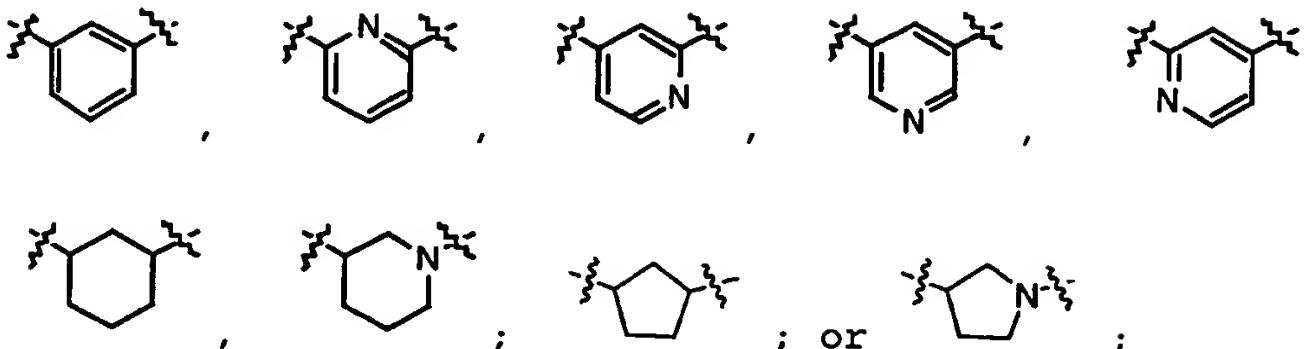
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alternatively, R⁵ and R^{5a} may be combined to form
 cyclopentyl, cyclohexyl, or cycloheptyl;

W is a bond, -CH₂-, or -CH(CH₃) -;

X is a bond;

5



Y is a bond, -CH₂-V-, -V-, or -V-CH₂-;

10

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, -NH-, or -N(CH₃) -;

15

Z is H, F, Cl, Br, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, s-butyl, t-butyl,

cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl,

phenyl, 2-F-phenyl, 3-F-phenyl, 4-F-phenyl,
2-Cl-phenyl, 3-Cl-phenyl, 4-Cl-phenyl,
2,3-diF-phenyl, 2,4-diF-phenyl, 2,5-diF-phenyl,
2,6-diF-phenyl, 3,4-diF-phenyl, 3,5-diF-phenyl,
2,3-diCl-phenyl, 2,4-diCl-phenyl, 2,5-diCl-phenyl,
2,6-diCl-phenyl, 3,4-diCl-phenyl, 3,5-diCl-phenyl,
25 3-F-4-Cl-phenyl, 3-F-5-Cl-phenyl, 3-Cl-4-F-phenyl,
2-MeO-phenyl, 3-MeO-phenyl, 4-MeO-phenyl, 2-Me-phenyl,
3-Me-phenyl, 4-Me-phenyl, 2-MeS-phenyl, 3-MeS-phenyl,
4-MeS-phenyl, 2-CF₃O-phenyl, 3-CF₃O-phenyl,
4-CF₃O-phenyl,

30

furanyl, thienyl, pyridyl, 2-Me-pyridyl, 3-Me-pyridyl,
4-Me-pyridyl, 1-imidazolyl, oxazolyl, isoxazolyl,
1-benzimidazolyl, morpholino, N-piperinyl,

35

phenyl-CH₂-, (2-F-phenyl)CH₂-, (3-F-phenyl)CH₂-,

(4-F-phenyl)CH₂- , (2-Cl-phenyl)CH₂- , (3-Cl-phenyl)CH₂- ,
 (4-Cl-phenyl)CH₂- , (2,3-diF-phenyl)CH₂- ,
 (2,4-diF-phenyl)CH₂- , (2,5-diF-phenyl)CH₂- ,
 (2,6-diF-phenyl)CH₂- , (3,4-diF-phenyl)CH₂- ,
 5 (3,5-diF-phenyl)CH₂- , (2,3-diCl-phenyl)CH₂- ,
 (2,4-diCl-phenyl)CH₂- , (2,5-diCl-phenyl)CH₂- ,
 (2,6-diCl-phenyl)CH₂- , (3,4-diCl-phenyl)CH₂- ,
 (3,5-diCl-phenyl)CH₂- , (3-F-4-Cl-phenyl)CH₂- ,
 (3-F-5-Cl-phenyl)CH₂- , (3-Cl-4-F-phenyl)CH₂- ,
 10 (2-MeO-phenyl)CH₂- , (3-MeO-phenyl)CH₂- ,
 (4-MeO-phenyl)CH₂- , (2-PhO-phenyl)CH₂- ,
 (3-PhO-phenyl)CH₂- , (4-PhO-phenyl)CH₂- ,
 (2-Me-phenyl)CH₂- , (3-Me-phenyl)CH₂- ,
 (4-Me-phenyl)CH₂- , (2-MeS-phenyl)CH₂- ,
 15 (3-MeS-phenyl)CH₂- , 4-MeS-phenyl)CH₂- ,
 (2-CF₃O-phenyl)CH₂- , (3-CF₃O-phenyl)CH₂- ,
 (4-CF₃O-phenyl)CH₂- , (furanyl)CH₂- , (thienyl)CH₂- ,
 (pyridyl)CH₂- , (2-Me-pyridyl)CH₂- , (3-Me-pyridyl)CH₂- ,
 (4-Me-pyridyl)CH₂- , (1-imidazolyl)CH₂- , (oxazolyl)CH₂- ,
 20 (isoxazolyl)CH₂- , (1-benzimidazolyl)CH₂- ,
 (cyclopropyl)CH₂- , (cyclobutyl)CH₂- , (cyclopentyl)CH₂- ,
 (cyclohexyl)CH₂- , (morpholino)CH₂- , (N-pipridinyl)CH₂- ,
 phenyl-CH₂CH₂- , (phenyl)₂CHCH₂- , (2-F-phenyl)CH₂CH₂- ,
 25 (3-F-phenyl)CH₂CH₂- , (4-F-phenyl)CH₂CH₂- ,
 (2-Cl-phenyl)CH₂CH₂- , (3-Cl-phenyl)CH₂CH₂- ,
 (4-Cl-phenyl)CH₂CH₂- , (2,3-diF-phenyl)CH₂CH₂- ,
 (2,4-diF-phenyl)CH₂CH₂- , (2,5-diF-phenyl)CH₂CH₂- ,
 (2,6-diF-phenyl)CH₂CH₂- , (3,4-diF-phenyl)CH₂CH₂- ,
 30 (3,5-diF-phenyl)CH₂CH₂- , (2,3-diCl-phenyl)CH₂CH₂- ,
 (2,4-diCl-phenyl)CH₂CH₂- , (2,5-diCl-phenyl)CH₂CH₂- ,
 (2,6-diCl-phenyl)CH₂CH₂- , (3,4-diCl-phenyl)CH₂CH₂- ,
 (3,5-diCl-phenyl)CH₂CH₂- , (3-F-4-Cl-phenyl)CH₂CH₂- ,
 (3-F-5-Cl-phenyl)CH₂CH₂- , (3-Cl-4-F-phenyl)CH₂CH₂- ,
 35 (2-MeO-phenyl)CH₂CH₂- , (3-MeO-phenyl)CH₂CH₂- ,
 (4-MeO-phenyl)CH₂CH₂- , (2-Me-phenyl)CH₂CH₂- ,
 (3-Me-phenyl)CH₂CH₂- , (4-Me-phenyl)CH₂CH₂- ,
 (2-MeS-phenyl)CH₂CH₂- , (3-MeS-phenyl)CH₂CH₂- ,

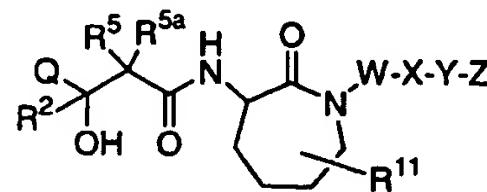
(4-MeS-phenyl)CH₂CH₂- , (2-CF₃O-phenyl)CH₂CH₂- ,
 (3-CF₃O-phenyl)CH₂CH₂- , (4-CF₃O-phenyl)CH₂CH₂- ,
 (furanyl)CH₂CH₂- , (thienyl)CH₂CH₂- , (pyridyl)CH₂CH₂- ,
 (2-Me-pyridyl)CH₂CH₂- , (3-Me-pyridyl)CH₂CH₂- ,
 5 (4-Me-pyridyl)CH₂CH₂- , (imidazolyl)CH₂CH₂- ,
 (oxazolyl)CH₂CH₂- , (isoxazolyl)CH₂CH₂- ,
 (benzimidazolyl)CH₂CH₂- , (cyclopropyl)CH₂CH₂- ,
 (cyclobutyl)CH₂CH₂- , (cyclopentyl)CH₂CH₂- ,
 (cyclohexyl)CH₂CH₂- , (morpholino)CH₂CH₂- , or
 10 (N-pipridinyl)CH₂CH₂- ;

R¹¹, at each occurrence, is independently selected from H,
 methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, s-
 butyl, t-butyl, phenyl, benzyl, phenethyl, cyclopropyl,
 15 cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl,
 cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl,
 cyclohexylmethyl, cycloheptylmethyl, cyclopropylethyl,
 cyclobutylethyl, cyclopentylethyl, cyclohexylethyl,
 2-F-phenyl-, 3-F-phenyl, 4-F-phenyl, 4-Cl-phenyl, 4-CH₃-
 20 phenyl, 4-MeO-phenyl-, 4-CF₃-phenyl, (4-F-phenyl)CH₂- ,
 (4-Cl-phenyl)CH₂- , (4-CH₃-phenyl)CH₂- ,
 (4-CF₃-phenyl)CH₂- , (4-F-phenyl)CH₂CH₂- ,
 (4-Cl-phenyl)CH₂CH₂- , (4-CH₃-phenyl)CH₂CH₂- ,
 (4-CF₃-phenyl)CH₂CH₂- , pyridin-2-yl-, pyridin-3-yl-,
 25 4-CF₃-pyridin-2-yl-, 4-CH₃-pyridin-2-yl-, thiazol-2-yl-,
 azapan-1-yl, N,N-dimethylamino, N,N-diethylamino, N,N-
 dipropylamino, and N,N-dibutylamino; and

R¹³, at each occurrence, is independently selected from H,
 30 MeO, F, and Cl.

[9] In a preferred embodiment the present invention
 provides a compound of Formula of Formula (Ic);

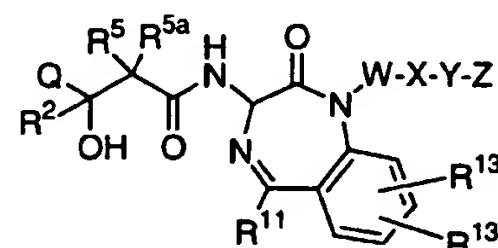
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(Ic)

or a pharmaceutically acceptable salt form or prodrug thereof.

5 [10] In a preferred embodiment the present invention provides a compound of Formula (Id);

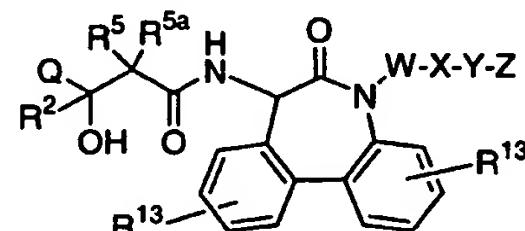


(Id)

10 or a pharmaceutically acceptable salt form or prodrug thereof.

[11] In a preferred embodiment the present invention provides a compound of Formula (Ie):

15



(Ie)

or a pharmaceutically acceptable salt form or prodrug thereof.

20

[12] In a preferred embodiment the present invention provides a compound selected from:

25 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl- 5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

30 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-(4-fluoro-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(2(R)-Benzyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 5 3-(2(R)-Isopropyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 10 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-4-(3,5-difluorophenoxy)butyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 15 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-(3,5-difluorophenoxy)butyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 20 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 25 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-(4-fluorophenyl)-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 30 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 35 3-(2(R)-Isobutyl -3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;

- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 5 3-(2(R)-Benzyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 10 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 15 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 20 3-(2(R)-Isopropyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 25 3-(2(R)-Methoxy-3(S)-hydroxyl-1-oxo-4-(4-trifluoromethylbenzyloxy)butyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 30 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-(2,4-difluorobenzyloxy)butyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 35 3-(2(R)-Vinyl-3(S)-hydroxyl-1-oxo-4-benzyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;

- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-5- phenylpentyl)amino-
1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-3-
5 cyclopropylpropyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-
1,4-benzodiazepin-2-one;
- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-heptyl)amino-1-methyl-
5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(R)-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-heptyl)amino-1-
methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(S)-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-heptyl)amino-1-
methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-nonyl)amino-1-methyl-
5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-hexyl)amino-1-methyl-
5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4- phenylbutyl)amino-
1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-5- phenylpentyl)amino-1-
methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-6- phenylhexyl)amino-1-
30 methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-butyl)amino-1-methyl-
5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-octyl)amino-1-methyl-
5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-heptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-3-phenylpropyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-5,5-dimethylhexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-hexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 2-(R)-cyclopropylmethyl-3-(S)-hydroxylheptanoic acid (2-oxo-1-(3-phenoxybenzyl)azapan-3-(S)-yl) amide;
- 25 2(R)-cyclopropylmethyl-5-(3,5-difluorophenyl)-3-(S)-hydroxypentanoic acid (2-oxo-1-(3-phenoxybenzyl)azapan-3-(S)-yl) amide;
- 30 2-(R)-cyclopropylmethyl-3-(S)-hydroxyheptanoic acid (1-(5-bromo-3-pyridinyl)methyl-2-oxo-azapan-3-(S)-yl) amide;
- 35 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(azapan-1-yl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(2-(R)-cyclopropylmethyl-5-(3,5-difluorophenyl)-3(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(pyridn-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(4-chlorophenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-methoxyphenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-methoxyphenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

20 3-(S)-(4-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxobutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

25 3-(S)-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxohept-6-enyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

30 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxohept-6-enyl)amino-1-methyl-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

35 3-(S)-(2-(R)-cyclopropylmethyl-5-(3,5-dimethylisoxazol-4-yl)-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-(pyridin-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(pyridin-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(2-(R)-iso-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(S)-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxo-5-(thiophen-2-yl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 30 3-(S)-(2-(R)-cyclopropylmethyl-5-(furan-2-yl)3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(S)-(2-(R)-cyclopropylmethyl-5-(3,5-difluorophenyl)-3-(S)-hydroxy-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(S)-(3-(S)-hydroxyl-2-(R)-(thiophen-2-yl)methyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(S)-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-7-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-7-methoxy-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(S)-(2-(R)-cyclobutylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(S)-(2-(R)-(3,5-difluorobenzyl)-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-(pyridin-2-yl)-2,3-dihydro-1H-benzodiazepin-2-one;
- 30 3-(2-(R)-iso-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(2-(R)-iso-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(2-(R)-cyclopropylmethyl-5-(furan-2-yl)-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxooctyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxononyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethyl(pyridin-2-yl))-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 30 3-(2-(R)-cyclobutylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(40trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(2-(R)-cyclopentylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-methyl-2-pyridiyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-methyl-2-pyridyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxobutyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(S)-(2-(R)-(3-butenyl)-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(S)-(2-(R)-(3-methylbutyl)3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-
- 15 benzodiazepin-2-one;
- 3-(S)-(2-(R)-ethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(S)-(2-(R)-propyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(S)-(2-(R)-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(4-(S)-amino-3-(R)-hydroxyl-2-(R)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 30 3-(4-(S)-(tert-butoxycarbonylamino-3-(R)-hydroxyl-2-(R)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(3-(tert-butoxycarbonylpyrrolidin-2-(R)-yl)-3-(R)-hydroxyl-2-(R)-methyl-1-oxopropyl)amino-7-chloro-5-(2-

- fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(3-(R)-hydroxyl-2-(R)-methyl-1-oxo-3-(pyrrolidin-2-(R)-yl)propyl)-amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(4-benzyloxy-3-(R)-hydroxyl-2-(R)-iso-propyl-1-oxobutyl-amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 2-(4-(S)-amino-3-(S)-hydroxyl-2-(S)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 2-(4-(S)-(tert-butoxycarbonylamino-3-(S)hydroxyl-2-(S)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(thiazol-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-cyclopropylmethyl-5-(thiazol-2-yl)-2,3-dihydro-1H-1,4benzodiazepin-2-one;
- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-cyclopropylmethyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-phenoxybenzyl)-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-pyridinylmethyl)-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10

3-(2-(S)-cyclopropylmethyl-3-(R)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15

3-(2-(S)-cyclopropylmethyl-3-(R)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(R)-cyclopropylmethyl-3-(R)-hydroxyl-1-

20 oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(S)-cyclopropylmethyl-3-(S)-hydroxyl-1-

25 oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(S)-cyclopropylmethyl-3-(S)-hydroxyl-1-

30 oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-3-(S)-methyl-1-

35 oxoheptyl)amino-1-methyl-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-phenoxybenzyl)-5-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10 3-(3-(S)-acetoxy-2-(R)-iso-butyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15 3-(S)-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-methoxy-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

20 1-(1-hydroxypentyl)cyclohexanecarboxylic acid(5-(4-fluorophenyl)-1-methyl-2-oxo-2,3-dihydro-1H-1,4-benzodiazepin-3-yl)amide;

20 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one;

25 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxooctyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one;

30 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxononyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one;

35 2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-heptanoic acid (2-oxo-1-(3-phenylamino-benzyl)azapan-3-(S)-yl) amide;

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-cyclopentyl-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-benzyl-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-benzyl-1-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-cycloheptyl-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

20 3-(2-(R)-cycloropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-cycloheptyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

25 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-butyl-5-cycloheptyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

30 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(2-pyridinylmethyl)-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

35 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-(3-pyridinylmethyl)-5-(2-fluorophenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(S)-cyclopropylmethyl-3-(S)-hydroxyl-1-

35 oxopentyl)amino-1-(3-pyridinylmethyl)-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-1(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(N,N-dibutylamino)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5

3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-n-butyl-5-t-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(2-oxo-3,3-dimethylbutyl)-5-n-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-t-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

20 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(2-picoly1)-5-n-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

25 3-(2-(R)-Isobutyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-homopiperidino-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

30 3-(2-(R)-cyclopropylmethyl-1,3-dioxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one; and

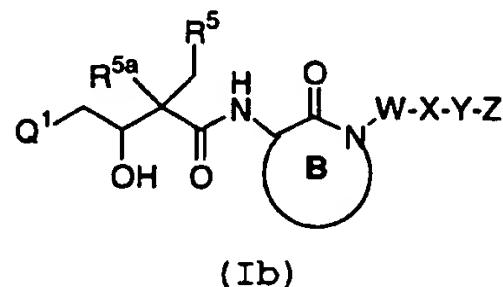
35 1-pentyrylcyclohexanecarboxylic acid (5-(4-fluorophenyl)-1-methyl-2-oxo-2,3-dihydro-1H-1,4-benzodiazepin-3-yl) amide.

[13] In a preferred embodiment the present invention provides a compound of Formula (I) wherein the stereochemistry of carbon 3 in lactam ring B is of the S configuration.

[14] In a preferred embodiment the present invention provides a compound of Formula (I) wherein the stereochemistry of carbon 3 in lactam ring B is of the R configuration.

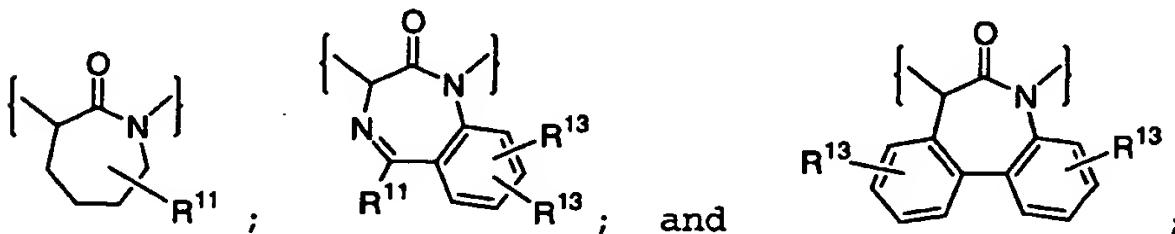
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[15] In a preferred embodiment the present invention provides a compound of Formula (Ib) :



10 wherein:

Ring B is selected from:



Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

- 15 C₂-C₆ alkenyl substituted with 0-3 R^{1a};
 C₂-C₆ alkynyl substituted with 0-3 R^{1a};
 C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};
 C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};
 C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or
 20 5 to 10 membered heterocycle containing 1 to 4
 heteroatoms selected from nitrogen, oxygen, and
 sulphur, wherein said 5 to 10 membered
 heterocycle is substituted with 0-3 R^{1b};

- 25 R^{1a}, at each occurrence, is independently selected from H,
 C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;
 C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};
 C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and

5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

5

R^{1b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and (C₁-C₆ alkyl)-O-C(=O)-;

10

R⁵ is OR¹⁴;

C₁-C₆ alkyl substituted with 0-3 R^{5b};

C₂-C₆ alkenyl substituted with 0-3 R^{5b}; or

15

C₂-C₆ alkynyl substituted with 0-3 R^{5b};

R^{5a} is H, methyl, ethyl, propyl, butyl, or C₂-C₄ alkenyl;

alternatively, R⁵ and R^{5a} may be combined to form a C₄-C₇

20

cycloalkyl ring;

R^{5b}, at each occurrence, is independently selected from:

H, methyl, ethyl, propyl, butyl, CF₃, OR¹⁴, Cl, F, Br,

I, =O, NR¹⁵R¹⁶,

25

C₃-C₇ cycloalkyl substituted with 0-3 R^{5c};

C₃-C₇ carbocycle substituted with 0-3 R^{5c};

phenyl substituted with 0-3 R^{5c}; and

5 to 7 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and

30

sulphur, wherein said 5 to 7 membered heterocycle

is substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H,

OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,

35

S(=O)CH₃, S(=O)₂CH₃, C₁-C₄ alkyl, C₁-C₃ alkoxy, C₁-C₂

haloalkyl, and C₁-C₂ haloalkoxy;

W is -(CHR⁸)_p-;

p is 0 or 1;

5 R⁸ is H, methyl, or ethyl;

X is a bond;

phenyl substituted with 0-2 R^{Xb};

C₅-C₆ cycloalkyl substituted with 0-3 R^{Xb}; or

10 5 to 6 membered heterocycle containing 1 to 3
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-2 R^{Xb};

15 R^{Xb}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

20 Y is a bond, -V-, -CH₂-V-, -V-CH₂-, or -CH₂-V-CH₂-;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, or
-N(R¹⁹)-;

25 Z is H, F, Cl, Br,

C₁-C₄ alkyl substituted with 0-2 R¹²;

C₂-C₄ alkenyl substituted with 0-2 R¹²;

C₂-C₄ alkynyl substituted with 0-2 R¹²;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

30 C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};

R¹¹, at each occurrence, is independently selected from H, =O, NR¹⁸R¹⁹, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹, CF₃; C₁-C₆ alkyl substituted with 0-1 R^{11a}; 5 phenyl substituted with 0-3 R^{11b}; C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or 5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle 10 is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, 15 isoxazolyl, and tetrazolyl;

R^{11a}, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, Cl, F, =O, NR¹⁵R¹⁶, CF₃;

20 phenyl substituted with 0-3 R^{11b}; C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or 5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle 25 is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, 30 isoxazolyl, and tetrazolyl;

R^{11b}, at each occurrence, is independently selected from H, OH, Cl, F, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, 35 ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

R¹² at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃,
acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄

5 alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄
haloalkyl-S-;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};
C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or
10 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{12b};

R^{12b}, at each occurrence, is independently selected from H,
15 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R¹³, at each occurrence, is independently selected from H,
20 OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂,
NR¹⁵R¹⁶, and CF₃;

R¹⁴, at each occurrence, is independently selected from H,
phenyl, benzyl, C₁-C₄ alkyl, and C₂-C₄ alkoxyalkyl;

25 R¹⁵, at each occurrence, is independently selected from H,
methyl, ethyl, propyl, butyl, phenyl, benzyl, and
phenethyl;

30 R¹⁶, at each occurrence, is independently selected from H,
OH, methyl, ethyl, propyl, butyl, phenyl, benzyl,
phenethyl, CH₃CH₂C(=O)-, CH₃C(=O)-, CH₃CH₂OC(=O)-,
CH₃OC(=O)-, CH₃CH₂S(=O)₂- and CH₃S(=O)₂-;

35 R¹⁷ is H, phenyl, benzyl, C₁-C₄ alkyl, or C₂-C₄ alkoxyalkyl;

R¹⁸, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl; and

5

R¹⁹, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, and butyl.

[16] In a preferred embodiment the present invention
10 provides a compound of Formula (Ib) :

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};
C₂-C₆ alkenyl substituted with 0-3 R^{1a};
C₂-C₆ alkynyl substituted with 0-3 R^{1a};
15 C₃-C₆ cycloalkyl substituted with 0-3 R^{1b};
phenyl substituted with 0-3 R^{1b}; or
5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
20 is substituted with 0-3 R^{1b};

R^{1a}, at each occurrence, is independently selected from
H, methyl, ethyl, propyl, butyl, OR¹⁴, Cl, F, Br, I,
NR¹⁵R¹⁶, CF₃;
25 C₃-C₆ carbocycle substituted with 0-3 R^{1b};
phenyl substituted with 0-3 R^{1b}; and
5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
30 is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl,
35 methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, C₁-C₂

haloalkoxy, (methyl)OC(=O)-, (ethyl)OC(=O)-,
(propyl)OC(=O)-, and (butyl)OC(=O)-;

R⁵ is OR¹⁴;

- 5 C₁-C₄ alkyl substituted with 0-1 R^{5b};
C₂-C₄ alkenyl substituted with 0-1 R^{5b}; or
C₂-C₄ alkynyl substituted with 0-1 R^{5b};

R^{5a} is H, methyl, ethyl, propyl, or butyl;

- 10 alternatively, R⁵ and R^{5a} may be combined to form a cyclobutyl, cyclopentyl, cyclohexyl, or cycloheptyl ring;

- 15 R^{5b}, at each occurrence, is independently selected from:
H, methyl, ethyl, propyl, butyl, CF₃, OR¹⁴, Cl, F,
=O, NR¹⁵R¹⁶,

C₃-C₇ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₇ carbocycle substituted with 0-3 R^{5c};

- 20 phenyl substituted with 0-3 R^{5c}; and
5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{5c}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;

- 25 30 R^{5c}, at each occurrence, is independently selected from H,
OH, Cl, F, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃,
S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy,
ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂

- 35 haloalkoxy;

W is a bond, -CH₂-, or -CH(CH₃)-;

X is a bond;

phenyl substituted with 0-1 R^{xb};

C₅-C₆ cycloalkyl substituted with 0-1 R^{xb}; or

5 to 6 membered heterocycle containing 1 to 3

5 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-1 R^{xb}; wherein said 5 to 6 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl,

10 thiazolyl, pyrrolyl, piperazinyl, piperidinyl, pyrazolyl, imidazolyl, oxazolyl, and isoxazolyl;

R^{xb}, at each occurrence, is independently selected from H, OH, Cl, F, Br, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, 15 S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

Y is a bond, -V-, -V-CH₂-, or -CH₂V-;

20

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, or -N(R¹⁹)-;

Z is H, F, Cl, Br,

25 C₁-C₄ alkyl substituted with 0-2 R¹²;

C₂-C₄ alkenyl substituted with 0-2 R¹²;

C₂-C₄ alkynyl substituted with 0-2 R¹²;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

30 5 to 6 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-3 R^{12b};

35 R¹¹, at each occurrence, is independently selected from

H, NR¹⁸R¹⁹, CF₃;

C₁-C₄ alkyl substituted with 0-1 R^{11a};

phenyl substituted with 0-3 R^{11b};

C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

5 5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;

10

15 R^{11a}, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, Cl, F, =O, NR¹⁵R¹⁶, CF₃;

phenyl substituted with 0-3 R^{11b};

C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

20 5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;

25

30 R^{11b}, at each occurrence, is independently selected from H, OH, Cl, F, NR¹⁵R¹⁶, CF₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

35 R¹² at each occurrence, is independently selected from H, OH, Cl, F, Br, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃, acetyl,

SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

phenyl substituted with 0-4 R^{12b};

5 C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

5 to 6 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-3 R^{12b};

10 R^{12b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

15 R¹³, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, Cl, F, Br, CN, NR¹⁵R¹⁶, and CF₃;

20 R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, methyl, ethyl, propyl, and butyl;

25 R¹⁵, at each occurrence, is independently selected from H, methyl, ethyl, propyl, or butyl;

R¹⁶, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl;

30 R¹⁸, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, phenyl, benzyl and, phenethyl; and

R^{19} , at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl and, phenethyl.

5 [17] In a preferred embodiment the present invention provides a compound of Formula (Ib) wherein:

Q^1 is $-CH_3$, $-CH_2CH_3$, $-CH_2CH_2CH_3$, $-CH_2CH_2CH_2CH_3$,

$-CH_2CH_2CH_2CH_2CH_3$, $-CH_2CH_2CH_2CH_2CH_2CH_3$, $-CH(CH_3)_2$,

10 $-CH(CH_3)CH_2CH_3$, $-CH_2CH(CH_3)_2$, $-CH_2C(CH_3)_3$,

$-CF_3$, $-CH_2CF_3$, $-CH_2CH_2CF_3$, $-CH_2CH_2CH_2CF_3$,

$-CH=CH_2$, $-CH_2CH=CH_2$, $-CH_2C(CH_3)=CH_2$, $-CH_2CH=C(CH_3)_2$,

15 $-CH_2CH_2CH=CH_2$, $-CH_2CH_2C(CH_3)=CH_2$, $-CH_2CH_2CH=C(CH_3)_2$,

cis- $CH_2CH=CH(CH_3)$, *cis*- $CH_2CH_2CH=CH(CH_3)$,

trans- $CH_2CH=CH(CH_3)$, *trans*- $CH_2CH_2CH=CH(CH_3)$;

20 $-C\equiv CH$, $-CH_2C\equiv CH$, $-CH_2C\equiv C(CH_3)$,

25

cyclopropyl-, cyclobutyl-, cyclopentyl-, cyclohexyl-,

cyclopropyl- CH_2 -, cyclobutyl- CH_2 -, cyclopentyl- CH_2 -,

cyclohexyl- CH_2 -, cyclopropyl- CH_2CH_2 -, cyclobutyl- CH_2CH_2 -,

cyclopentyl- CH_2CH_2 -, cyclohexyl- CH_2CH_2 -,

phenyl-, 2-F-phenyl-, 3-F-phenyl-, 4-F-phenyl-,

4-methoxyphenyl-, 4-ethoxyphenyl-, 4-propoxyphenyl-,

phenyl- CH_2 -, (2-F-phenyl) CH_2 -, (3-F-phenyl) CH_2 -,

(4-F-phenyl) CH_2 -, (2-Cl-phenyl) CH_2 -, (3-Cl-phenyl) CH_2 -,

30

(4-Cl-phenyl) CH_2 -,

(2,3-diF-phenyl) CH_2 -, (2,4-diF-phenyl) CH_2 -,

(2,5-diF-phenyl) CH_2 -, (2,6-diF-phenyl) CH_2 -,

(3,4-diF-phenyl) CH_2 -, (3,5-diF-phenyl) CH_2 -,

35

(2,3-diCl-phenyl) CH_2 -, (2,4-diCl-phenyl) CH_2 -,

(2,5-diCl-phenyl) CH_2 -, (2,6-diCl-phenyl) CH_2 -,

(3,4-diCl-phenyl) CH_2 -, (3,5-diCl-phenyl) CH_2 -,

(3-F-4-Cl-phenyl)CH₂- , (3-F-5-Cl-phenyl)CH₂- ,
 (3-Cl-4-F-phenyl)CH₂- ,

5 2-furanyl-CH₂- , 3-furanyl-CH₂- , 2-thienyl-CH₂- ,
 3-thienyl-CH₂- , 2-pyridyl-CH₂- , 3-pyridyl-CH₂- ,
 4-pyridyl-CH₂- , 1-imidazolyl-CH₂- , 2-oxazolyl-CH₂- ,
 4-oxazolyl-CH₂- , 5-oxazolyl-CH₂- , 3-isoxazolyl-CH₂- ,
 4-isoxazolyl-CH₂- , 5-isoxazolyl-CH₂- ,

10 phenyl-CH₂CH₂- , (2-F-phenyl)CH₂CH₂- ,
 (3-F-phenyl)CH₂CH₂- , (4-F-phenyl)CH₂CH₂- ,
 (2-Cl-phenyl)CH₂CH₂- , (3-Cl-phenyl)CH₂CH₂- ,
 (4-Cl-phenyl)CH₂CH₂- ,

15 (2,3-diF-phenyl)CH₂CH₂- , (2,4-diF-phenyl)CH₂CH₂- ,
 (2,5-diF-phenyl)CH₂CH₂- , (2,6-diF-phenyl)CH₂CH₂- ,
 (3,4-diF-phenyl)CH₂CH₂- , (3,5-diF-phenyl)CH₂CH₂- ,
 (2,3-diCl-phenyl)CH₂CH₂- , (2,4-diCl-phenyl)CH₂CH₂- ,
 (2,5-diCl-phenyl)CH₂CH₂- , (2,6-diCl-phenyl)CH₂CH₂- ,
 (3,4-diCl-phenyl)CH₂CH₂- , (3,5-diCl-phenyl)CH₂CH₂- ,
 20 (3-F-4-Cl-phenyl)CH₂CH₂- , (3-F-5-Cl-phenyl)CH₂CH₂- ;

furanyl-CH₂CH₂- , thienyl-CH₂CH₂- , pyridyl-CH₂CH₂- ,
 1-imidazolyl-CH₂CH₂- , oxazolyl-CH₂CH₂- ,
 isoxazolyl-CH₂CH₂- , 3,5-dimethylisoxazol-4-yl-CH₂CH₂- ,
 25 phenyl-propyl- ;

benzyl-CH(NH₂)- , benzyl-CH(NHC(=O)-O-tBu)- ,
 benzyloxy-CH₂- , pyrrolidin-2-yl- , or
 3-t-butoxycarbonylpyrrolidin-2-yl- ;

30 R⁵ is -CH₃ , -CH₂CH₃ , -CH₂CH₂CH₃ , -CH(CH₃)₂ , -CH₂CH₂CH₂CH₃ ,
 -CH(CH₃)CH₂CH₃ , -CH₂CH(CH₃)₂ , -CH₂C(CH₃)₃ ,
 -CH₂CH₂CH₂CH₂CH₃ , -CH(CH₃)CH₂CH₂CH₃ , -CH₂CH(CH₃)CH₂CH₃ ,
 -CH₂CH₂CH(CH₃)₂ , -CH(CH₂CH₃)₂ ,

35 -CF₃ , -CH₂CF₃ , -CH₂CH₂CF₃ , -CH₂CH₂CH₂CF₃ , -CH₂CH₂CH₂CH₂CF₃ ,
 -CH=CH₂ , -CH₂CH=CH₂ , -CH₂CH₂CH=CH₂ , -CH=CHCH₃ ,

cis-CH₂CH=CH(CH₃), *trans*-CH₂CH=CH(CH₃),
trans-CH₂CH=CH(C₆H₅), -CH₂CH=C(CH₃)₂, *cis*-CH₂CH=CHCH₂CH₃,
trans-CH₂CH=CHCH₂CH₃, *cis*-CH₂CH₂CH=CH(CH₃), *trans*-
CH₂CH₂CH=CH(CH₃), *trans*-CH₂CH=CHCH₂(C₆H₅),

5

-C≡CH, -CH₂C≡CH, -CH₂C≡C(CH₃), -CH₂C≡C(C₆H₅),
-CH₂CH₂C≡CH, -CH₂CH₂C≡C(CH₃), -CH₂CH₂C≡C(C₆H₅),
-CH₂CH₂CH₂C≡CH, -CH₂CH₂CH₂C≡C(CH₃), -CH₂CH₂CH₂C≡C(C₆H₅),

10

cyclopropyl-CH₂-, cyclobutyl-CH₂-, cyclopentyl-CH₂-,
cyclohexyl-CH₂-, (2-CH₃-cyclopropyl)CH₂-,
(3-CH₃-cyclobutyl)CH₂-, cyclopropyl-CH₂CH₂-,
cyclobutyl-CH₂CH₂-, cyclopentyl-CH₂CH₂-,
cyclohexyl-CH₂CH₂-, (2-CH₃-cyclopropyl)CH₂CH₂-,
(3-CH₃-cyclobutyl)CH₂CH₂-,

15

phenyl-CH₂-, (2-F-phenyl)CH₂-, (3-F-phenyl)CH₂-,
(4-F-phenyl)CH₂-, (3,5-diF-phenyl)CH₂-, 2-furanyl-CH₂-,
3-furanyl-CH₂-, 2-thienyl-CH₂-, 3-thienyl-CH₂-,
20 2-pyridyl-CH₂-, 3-pyridyl-CH₂-,
4-pyridyl-CH₂-, 1-imidazolyl-CH₂-, 2-oxazolyl-CH₂-,
4-oxazolyl-CH₂-, 5-oxazolyl-CH₂-, 3-isoxazolyl-CH₂-,
4-isoxazolyl-CH₂-, 5-isoxazolyl-CH₂-,

25

phenyl-CH₂CH₂-, (2-F-phenyl)CH₂CH₂-, (3-F-phenyl)CH₂CH₂-,
(4-F-phenyl)CH₂CH₂-, furanyl-CH₂CH₂-, thieryl-CH₂CH₂-,
pyridyl-CH₂CH₂-, 1-imidazolyl-CH₂CH₂-, oxazolyl-CH₂CH₂-,
isoxazolyl-CH₂CH₂-;

30

methoxy, ethoxy, propoxy, or butoxy;

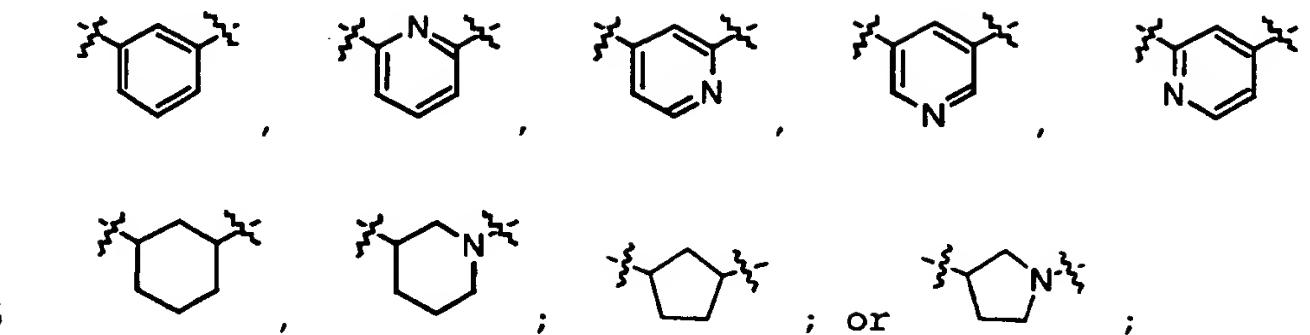
R^{5a} is H;

alternatively, R⁵ and R^{5a} may be combined to form

35 cyclopentyl, cyclohexyl, or cycloheptyl;

W is a bond, -CH₂-, or -CH(CH₃)-;

X is a bond;



5

Y is a bond, -CH₂-V-, -V-, or -V-CH₂-;

10

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, -NH-, or -N(CH₃)-;

Z is H, F, Cl, Br, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, s-butyl, t-butyl,

15

cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl,
phenyl, 2-F-phenyl, 3-F-phenyl, 4-F-phenyl,
2-Cl-phenyl, 3-Cl-phenyl, 4-Cl-phenyl,
2,3-diF-phenyl, 2,4-diF-phenyl, 2,5-diF-phenyl,
20 2,6-diF-phenyl, 3,4-diF-phenyl, 3,5-diF-phenyl,
2,3-diCl-phenyl, 2,4-diCl-phenyl, 2,5-diCl-phenyl,
2,6-diCl-phenyl, 3,4-diCl-phenyl, 3,5-diCl-phenyl,
3-F-4-Cl-phenyl, 3-F-5-Cl-phenyl, 3-Cl-4-F-phenyl,
2-MeO-phenyl, 3-MeO-phenyl, 4-MeO-phenyl, 2-Me-phenyl,
25 3-Me-phenyl, 4-Me-phenyl, 2-MeS-phenyl, 3-MeS-phenyl,
4-MeS-phenyl, 2-CF₃O-phenyl, 3-CF₃O-phenyl,
4-CF₃O-phenyl,

30

furanyl, thienyl, pyridyl, 2-Me-pyridyl, 3-Me-pyridyl,
4-Me-pyridyl, 1-imidazolyl, oxazolyl, isoxazolyl,
1-benzimidazolyl, morpholino, N-piperinyl.

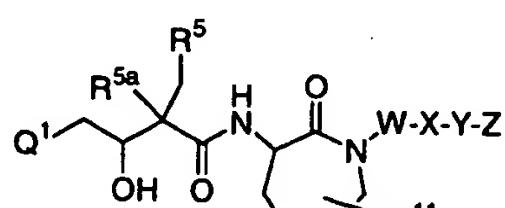
35

phenyl-CH₂-, (2-F-phenyl)CH₂-, (3-F-phenyl)CH₂-,
(4-F-phenyl)CH₂-, (2-Cl-phenyl)CH₂-, (3-Cl-phenyl)CH₂-,
(4-Cl-phenyl)CH₂-, (2,3-diF-phenyl)CH₂-,

(2, 4-diF-phenyl)CH₂- , (2, 5-diF-phenyl)CH₂- ,
 (2, 6-diF-phenyl)CH₂- , (3, 4-diF-phenyl)CH₂- ,
 (3, 5-diF-phenyl)CH₂- , (2, 3-diCl-phenyl)CH₂- ,
 (2, 4-diCl-phenyl)CH₂- , (2, 5-diCl-phenyl)CH₂- ,
 5 (2, 6-diCl-phenyl)CH₂- , (3, 4-diCl-phenyl)CH₂- ,
 (3, 5-diCl-phenyl)CH₂- , (3-F-4-Cl-phenyl)CH₂- ,
 (3-F-5-Cl-phenyl)CH₂- , (3-Cl-4-F-phenyl)CH₂- ,
 (2-MeO-phenyl)CH₂- , (3-MeO-phenyl)CH₂- ,
 (4-MeO-phenyl)CH₂- , (2-PhO-phenyl)CH₂- ,
 10 (3-PhO-phenyl)CH₂- , (4-PhO-phenyl)CH₂- ,
 (2-Me-phenyl)CH₂- , (3-Me-phenyl)CH₂- ,
 (4-Me-phenyl)CH₂- , (2-MeS-phenyl)CH₂- ,
 (3-MeS-phenyl)CH₂- , 4-MeS-phenyl)CH₂- ,
 (2-CF₃O-phenyl)CH₂- , (3-CF₃O-phenyl)CH₂- ,
 15 (4-CF₃O-phenyl)CH₂- , (furanyl)CH₂- , (thienyl)CH₂- ,
 (pyridyl)CH₂- , (2-Me-pyridyl)CH₂- , (3-Me-pyridyl)CH₂- ,
 (4-Me-pyridyl)CH₂- , (1-imidazolyl)CH₂- , (oxazolyl)CH₂- ,
 (isoxazolyl)CH₂- , (1-benzimidazolyl)CH₂- ,
 (cyclopropyl)CH₂- , (cyclobutyl)CH₂- , (cyclopentyl)CH₂- ,
 20 (cyclohexyl)CH₂- , (morpholino)CH₂- , (N-pipridinyl)CH₂- ,

 phenyl-CH₂CH₂- , (phenyl)₂CHCH₂- , (2-F-phenyl)CH₂CH₂- ,
 (3-F-phenyl)CH₂CH₂- , (4-F-phenyl)CH₂CH₂- ,
 (2-Cl-phenyl)CH₂CH₂- , (3-Cl-phenyl)CH₂CH₂- ,
 25 (4-Cl-phenyl)CH₂CH₂- , (2, 3-diF-phenyl)CH₂CH₂- ,
 (2, 4-diF-phenyl)CH₂CH₂- , (2, 5-diF-phenyl)CH₂CH₂- ,
 (2, 6-diF-phenyl)CH₂CH₂- , (3, 4-diF-phenyl)CH₂CH₂- ,
 (3, 5-diF-phenyl)CH₂CH₂- , (2, 3-diCl-phenyl)CH₂CH₂- ,
 (2, 4-diCl-phenyl)CH₂CH₂- , (2, 5-diCl-phenyl)CH₂CH₂- ,
 30 (2, 6-diCl-phenyl)CH₂CH₂- , (3, 4-diCl-phenyl)CH₂CH₂- ,
 (3, 5-diCl-phenyl)CH₂CH₂- , (3-F-4-Cl-phenyl)CH₂CH₂- ,
 (3-F-5-Cl-phenyl)CH₂CH₂- , (3-Cl-4-F-phenyl)CH₂CH₂- ,
 (2-MeO-phenyl)CH₂CH₂- , (3-MeO-phenyl)CH₂CH₂- ,
 (4-MeO-phenyl)CH₂CH₂- , (2-Me-phenyl)CH₂CH₂- ,
 35 (3-Me-phenyl)CH₂CH₂- , (4-Me-phenyl)CH₂CH₂- ,
 (2-MeS-phenyl)CH₂CH₂- , (3-MeS-phenyl)CH₂CH₂- ,
 (4-MeS-phenyl)CH₂CH₂- , (2-CF₃O-phenyl)CH₂CH₂- ,

(3-CF₃O-phenyl)CH₂CH₂- , (4-CF₃O-phenyl)CH₂CH₂- ,
 (furanyl)CH₂CH₂- , (thienyl)CH₂CH₂- , (pyridyl)CH₂CH₂- ,
 (2-Me-pyridyl)CH₂CH₂- , (3-Me-pyridyl)CH₂CH₂- ,
 (4-Me-pyridyl)CH₂CH₂- , (imidazolyl)CH₂CH₂- ,
 5 (oxazolyl)CH₂CH₂- , (isoxazolyl)CH₂CH₂- ,
 (benzimidazolyl)CH₂CH₂- , (cyclopropyl)CH₂CH₂- ,
 (cyclobutyl)CH₂CH₂- , (cyclopentyl)CH₂CH₂- ,
 (cyclohexyl)CH₂CH₂- , (morpholino)CH₂CH₂- , or
 (N-pipridinyl)CH₂CH₂- ;
 10 R¹¹, at each occurrence, is independently selected from H,
 methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, s-
 butyl, t-butyl, phenyl, benzyl, phenethyl, cyclopropyl,
 cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl,
 15 cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl,
 cyclohexylmethyl, cycloheptylmethyl, cyclopropylethyl,
 cyclobutylethyl, cyclopentylethyl, cyclohexylethyl,
 2-F-phenyl-, 3-F-phenyl, 4-F-phenyl, 4-Cl-phenyl, 4-CH₃-
 phenyl, 4-MeO-phenyl-, 4-CF₃-phenyl, (4-F-phenyl)CH₂- ,
 20 (4-Cl-phenyl)CH₂- , (4-CH₃-phenyl)CH₂- ,
 (4-CF₃-phenyl)CH₂- , (4-F-phenyl)CH₂CH₂- ,
 (4-Cl-phenyl)CH₂CH₂- , (4-CH₃-phenyl)CH₂CH₂- ,
 (4-CF₃-phenyl)CH₂CH₂- , pyridin-2-yl-, pyridin-3-yl-,
 4-CF₃-pyridin-2-yl-, 4-CH₃-pyridin-2-yl-, thiazol-2-yl-,
 25 azapan-1-yl, N,N-dimethylamino, N,N-diethylamino, N,N-
 dipropylamino, and N,N-dibutylamino; and
 R¹³, at each occurrence, is independently selected from H,
 MeO, F, and Cl.
 30 [18] In a preferred embodiment the present invention
 provides a compound of Formula (If);

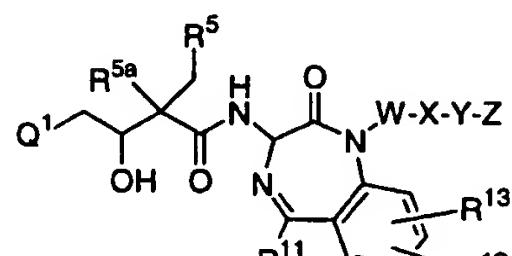


(If)

35

or a pharmaceutically acceptable salt form or prodrug thereof.

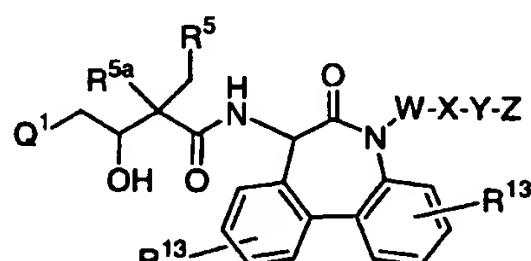
[19] In a preferred embodiment the present invention
5 provides a compound of Formula (Ig);



(Ig)

or a pharmaceutically acceptable salt form or prodrug
10 thereof.

[20] In a preferred embodiment the present invention
provides a compound of Formula (Ih);



(Ih)

or a pharmaceutically acceptable salt form or prodrug
thereof.

20 In another preferred embodiment the present invention
provides all herein disclosed embodiments with the proviso
that when R⁵ and R^{5a} are not simultaneously H.

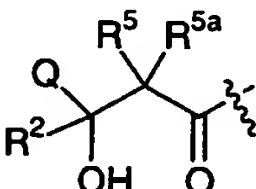
In another preferred embodiment the present invention
25 provides all herein disclosed embodiments with the proviso
that when Q is a 9 membered benzofused heterocyclic group
substituted by 0, 1, or 2 R^{1a}, then R³ is H.

In another preferred embodiment the present invention provides all herein disclosed embodiments with the proviso that when -WXYZ is a tertiary butyl group and R⁵ is either C₁-C₄ alkyl or C₂ alkenyl, then Q is not phenyl substituted by 0, 1 or 2 R^{1a}.

In another preferred embodiment the present invention provides all herein disclosed embodiments with the proviso that when R⁵ is C₁-C₃ alkyl, then Q is not phenyl substituted by 0, 1 or 2 R^{1a}.

In another preferred embodiment the present invention provides all herein disclosed embodiments with the proviso that the moiety:

15



of Formula (I), et seq., is not a C₁-C₈ alkyl, C₂-C₈ alkenyl, C₂-C₈ alkynyl, C₃-C₁₀ cycloalkyl-C₁-C₄ alkyl, C₃-C₁₀ cycloalkyl, C₁-C₄ alkyl-O-C₁-C₄ alkyl, C₁-C₄ alkyl-S-C₁-C₄ alkyl, C₂-C₄ alkyl-NR²⁰-C₂-C₄ alkyl, C₂-C₄ alkyl-C₆-C₁₀ aryl, C₂-C₄ alkyl-C₆-C₁₀ cycloalkyl, C₂-C₈ alkenyl, C₆-C₁₀ aryl-C₁-C₄ alkyl, C₆-C₁₀ aryl-C₂-C₄-alkynyl, indol-3-yl-C₁-C₃ alkyl, and imidazol-4-yl-C₁-C₃ alkyl; where any alkyl group is substituted with OH.

25

In a second embodiment, the present invention provides a pharmaceutical composition comprising a compound of Formula (I) and a pharmaceutically acceptable carrier.

30

In a third embodiment, the present invention provides a method for the treatment of a neurological disorder associated with β-amyloid production comprising administering to a host in need of such treatment a

therapeutically effective amount of a compound of Formula (I).

5 In a preferred embodiment the neurological disorder associated with β -amyloid production is Alzheimer's Disease.

In a fourth embodiment, the present invention provides a method for inhibiting γ -secretase activity for the 10 treatment of a physiological disorder associated with inhibiting γ -secretase activity comprising administering to a host in need of such inhibition a therapeutically effective amount of a compound of Formula (I) that inhibits γ -secretase activity.

15

In a preferred embodiment the physiological disorder associated with inhibiting γ -secretase activity is Alzheimer's Disease.

20 In a fifth embodiment, the present invention provides a compound of Formula (I) for use in therapy.

25 In a preferred embodiment the present invention provides a compound of Formula (I) for use in therapy of Alzheimer's Disease.

30 In a sixth embodiment, the present invention provides for the use of a compound of Formula (I) for the manufacture of a medicament for the treatment of Alzheimer's Disease.

DEFINITIONS

As used herein, the term "A β " denotes the protein designated A β , β -amyloid peptide, and sometimes β /A4, in the art. A β is an approximately 4.2 kilodalton (kD) 35 protein of about 39 to 43 amino acids found in amyloid plaques, the walls of meningeal and parenchymal arterioles,

small arteries, capillaries, and sometimes, venules. The isolation and sequence data for the first 28 amino acids are described in U.S. Pat. No 4,666,829. The 43 amino acid sequence is:

1

Asp	Ala	Glu	Phe	Arg	His	Asp	Ser	Gly	Tyr
11									
Glu	Val	His	His	Gln	Lys	Leu	Val	Phe	Phe
21									
Ala	Glu	Asp	Val	Gly	Ser	Asn	Lys	Gly	Ala
31									
Ile	Ile	Gly	Leu	Met	Val	Gly	Gly	Val	Val
41									
Ile	Ala	Thr							

5

The term "APP", as used herein, refers to the protein known in the art as β amyloid precursor protein. This protein is the precursor for A β and through the activity of "secretase" enzymes, as used herein, it is processed into

10 A β . Differing secretase enzymes, known in the art, have been designated β secretase, generating the N-terminus of A β , α secretase cleaving around the 16/17 peptide bond in A β , and " γ secretases", as used herein, generating C-terminal A β fragments ending at position 38, 39, 40, 42, 15 and 43 or generating C-terminal extended precursors which are subsequently truncated to the above polypeptides

The compounds herein described may have asymmetric centers. Compounds of the present invention containing an asymmetrically substituted atom may be isolated in

20 optically active or racemic forms. It is well known in the art how to prepare optically active forms, such as by resolution of racemic forms or by synthesis from optically active starting materials. Many geometric isomers of olefins, C=N double bonds, and the like can also be present 25 in the compounds described herein, and all such stable isomers are contemplated in the present invention. Cis and

trans geometric isomers of the compounds of the present invention are described and may be isolated as a mixture of isomers or as separated isomeric forms. All chiral, diastereomeric, racemic forms and all geometric isomeric 5 forms of a structure are intended, unless the specific stereochemistry or isomeric form is specifically indicated.

The term "substituted," as used herein, means that any one or more hydrogens on the designated atom is replaced with a selection from the indicated group, provided that 10 the designated atom's normal valency is not exceeded, and that the substitution results in a stable compound. When a substituent is keto (i.e., =O), then 2 hydrogens on the atom are replaced.

When any variable (e.g., R^{1a}, R^{4a}, R¹³ etc.) occurs 15 more than one time in any constituent or formula for a compound, its definition at each occurrence is independent of its definition at every other occurrence. Thus, for example, if a group is shown to be substituted with 0-3 R^{1a}, then said group may optionally be substituted with up 20 to three R^{1a} groups and R^{1a} at each occurrence is selected independently from the definition of R^{1a}. Also, combinations of substituents and/or variables are permissible only if such combinations result in stable compounds.

When a bond to a substituent is shown to cross a bond connecting two atoms in a ring, then such substituent may be bonded to any atom on the ring. When a substituent is listed without indicating the atom via which such substituent is bonded to the rest of the compound of a 30 given formula, then such substituent may be bonded via any atom in such substituent. Combinations of substituents and/or variables are permissible only if such combinations result in stable compounds.

As used herein, "alkyl" or "alkylene" is intended to 35 include both branched and straight-chain saturated aliphatic hydrocarbon groups having the specified number of carbon atoms; for example, "C₁-C₆ alkyl" denotes alkyl

having 1 to 6 carbon atoms. Examples of alkyl include, but are not limited to, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, sec-butyl, t-butyl, pentyl, and hexyl.

Preferred "alkyl" group is "C₁-C₄ alkyl" wherein methyl,

5 ethyl, n-propyl, i-propyl, n-butyl, and i-butyl, are specifically preferred. As used herein, "C₁-C₃ alkyl", whether a terminal substituent or a alkylene group linking two substituents, is understood to specifically include both branched and straight-chain methyl, ethyl, and propyl.

10 As used herein, "alkenyl" or "alkenylene" is intended to include hydrocarbon chains of either a straight or branched configuration and one or more unsaturated carbon-carbon bonds which may occur in any stable point along the chain. Examples of "C₂-C₆ alkenyl" include, but

15 are not limited to, ethenyl, 1-propenyl, 2-propenyl, 1-but enyl, 2-but enyl, 3-but enyl, 3-methyl-2-but enyl, 2-pentenyl, 3-pentenyl, hexenyl, and the like.

As used herein, "alkynyl" or "alkynylene" is intended to include hydrocarbon chains of either a straight or

20 branched configuration and one or more carbon-carbon triple bonds which may occur in any stable point along the chain, such as ethynyl, 1-propynyl, 2-propynyl, 1-butynyl, 2-butynyl, 3-butynyl, and the like.

"Alkoxy" or "alkyloxy" represents an alkyl group as defined above with the indicated number of carbon atoms attached through an oxygen bridge. Examples of alkoxy include, but are not limited to, methoxy, ethoxy, n-propoxy, i-propoxy, n-butoxy, s-butoxy, t-butoxy, n-pentoxy, and s-pentoxy. Preferred alkoxy groups are

30 methoxy, ethoxy, n-propoxy, i-propoxy, n-butoxy, s-butoxy, t-butoxy. Similarly, "alkylthio" or "thioalkoxy" is represents an alkyl group as defined above with the indicated number of carbon atoms attached through a sulphur bridge.

35 "Halo" or "halogen" as used herein refers to fluoro, chloro, bromo, and iodo. Unless otherwise specified, preferred halo is fluoro and chloro. "Counterion" is used

to represent a small, negatively charged species such as chloride, bromide, hydroxide, acetate, sulfate, and the like.

- "Haloalkyl" is intended to include both branched and
- 5 straight-chain saturated aliphatic hydrocarbon groups having the specified number of carbon atoms, substituted with 1 or more halogen (for example $-C_vF_w$ where $v = 1$ to 3 and $w = 1$ to $(2v+1)$). Examples of haloalkyl include, but are not limited to, trifluoromethyl, trichloromethyl,
- 10 pentafluoroethyl, pentachloroethyl, 2,2,2-trifluoroethyl, 2,2-difluoroethyl, heptafluoropropyl, and heptachloropropyl. "Haloalkoxy" is intended to mean a haloalkyl group as defined above with the indicated number of carbon atoms attached through an oxygen bridge; for
- 15 example trifluoromethoxy, pentafluoroethoxy, 2,2,2-trifluoroethoxy, and the like. "Halothioalkoxy" is intended to mean a haloalkyl group as defined above with the indicated number of carbon atoms attached through a sulphur bridge.
- 20 "Cycloalkyl" is intended to include saturated ring groups, having the specified number of carbon atoms. For example, " C_3-C_6 cycloalkyl" denotes such as cyclopropyl, cyclobutyl, cyclopentyl, or cyclohexyl.
- As used herein, "carbocycle" is intended to mean any
- 25 stable 3- to 7-membered monocyclic or bicyclic or 7- to 13-membered bicyclic or tricyclic, any of which may be saturated, partially unsaturated, or aromatic. Examples of such carbocycles include, but are not limited to, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl,
- 30 cycloheptyl, adamantyl, cyclooctyl, [3.3.0]bicyclooctane, [4.3.0]bicyclononane, [4.4.0]bicyclodecane (decalin), [2.2.2]bicyclooctane, fluorenyl, phenyl, naphthyl, indanyl, adamantyl, or tetrahydronaphthyl (tetralin). Preferred example of " C_3-C_{10} carbocycle" or " C_3-C_6 carbocycle" is C_3-C_6 cycloalkyl, specifically cyclopropyl, cyclobutyl,
- 35 cyclopentyl, and cyclohexyl.

As used herein, the term "heterocycle" or "heterocyclic ring" is intended to mean a stable 5- to 7-membered monocyclic or bicyclic or 7- to 14-membered bicyclic heterocyclic ring which is saturated partially or unsaturated or unsaturated (aromatic), and which consists of carbon atoms and 1, 2, 3 or 4 heteroatoms, preferably 1, 2, or 3 heteroatoms, independently selected from the group consisting of N, O and S and including any bicyclic group in which any of the above-defined heterocyclic rings is fused to a benzene ring. The nitrogen and sulfur heteroatoms may optionally be oxidized. The heterocyclic ring may be attached to its pendant group at any heteroatom or carbon atom which results in a stable structure. The heterocyclic rings described herein may be substituted on carbon or on a nitrogen atom if the resulting compound is stable. If specifically noted, a nitrogen in the heterocycle may optionally be quaternized. It is preferred that when the total number of S and O atoms in the heterocycle exceeds 1, then these heteroatoms are not adjacent to one another. It is preferred that the total number of S and O atoms in the heterocycle is not more than 1.

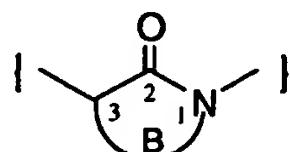
Examples of heterocycles include, but are not limited to, 1H-indazole, 2-pyrrolidonyl, 2H,6H-1,5,2-dithiazinyl, 2H-pyrrolyl, 3H-indolyl, 4-piperidonyl, 4aH-carbazole, 4H-quinolizinyl, 6H-1,2,5-thiadiazinyl, acridinyl, azocinyl, benzimidazolyl, benzofuranyl, benzothiofuranyl, benzothiophenyl, benzoxazolyl, benzthiazolyl, benztriazolyl, benztetrazolyl, benzisoxazolyl, 30 benzisothiazolyl, benzimidazolonyl, carbazolyl, 4aH-carbazolyl, b-carbolinyl, chromanyl, chromenyl, cinnolinyl, decahydroquinolinyl, 2H,6H-1,5,2-dithiazinyl, dihydrofuro[2,3-b]tetrahydrofuran, furanyl, furazanyl, homopiperidinyl, imidazolidinyl, imidazolinyl, imidazolyl, 35 1H-indazolyl, indolenyl, indolinyl, indolizinyl, indoly1, isobenzofuranyl, isochromanyl, isoindazolyl, isoindolinyl, isoindolyl, isoquinolinyl, isothiazolyl, isoxazolyl,

morpholinyl, naphthyridinyl, octahydroisoquinolinyl,
oxadiazolyl, 1,2,3-oxadiazolyl, 1,2,4-oxadiazolyl,
1,2,5-oxadiazolyl, 1,3,4-oxadiazolyl, oxazolidinyl,
oxazolyl, oxazolidinylperimidinyl, phenanthridinyl,
5 phenanthrolinyl, phenarsazinyl, phenazinyl, phenothiazinyl,
phenoxythiinyl, phenoxyazinyl, phthalazinyl, piperazinyl,
piperidinyl, pteridinyl, piperidonyl, 4-piperidonyl,
pteridinyl, purinyl, pyranyl, pyrazinyl, pyrazolidinyl,
pyrazolinyl, pyrazolyl, pyridazinyl, pyridoazazole,
10 pyridoimidazole, pyridothiazole, pyridinyl, pyridyl,
pyrimidinyl, pyrrolidinyl, pyrrolinyl, pyrrolyl,
quinazolinyl, quinolinyl, 4H-quinolizinyl, quinoxalinyl,
quinuclidinyl, carbolinyl, tetrahydrofuranyl,
tetrahydroisoquinolinyl, tetrahydroquinolinyl,
15 6H-1,2,5-thiadiazinyl, 1,2,3-thiadiazolyl,
1,2,4-thiadiazolyl, 1,2,5-thiadiazolyl, 1,3,4-thiadiazolyl,
thianthrenyl, thiazolyl, thienyl, thienothiazolyl,
thienooxazolyl, thienoimidazolyl, thiophenyl, triazinyl,
1,2,3-triazolyl, 1,2,4-triazolyl, 1,2,5-triazolyl,
20 1,3,4-triazolyl, xanthenyl. Preferred 5 to 10 membered
heterocycles include, but are not limited to, pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl,
pyrrolyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl,
tetrazolyl, benzofuranyl, benzothiofuranyl, indolyl,
25 benzimidazolyl, 1H-indazolyl, oxazolidinyl, isoxazolidinyl,
benzotriazolyl, benzisoxazolyl, oxindolyl, benzoxazolinyl,
quinolinyl, and isoquinolinyl. Preferred 5 to 7 membered
heterocycles include, but are not limited to, pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl,
30 pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl,
pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, tetrazolyl;
more preferred 5 to 7 membered heterocycles include, but
are not limited to, pyridinyl, pyrimidinyl, triazinyl,
furanyl, thienyl, thiazolyl, piperazinyl, piperidinyl,
35 homopiperidinyl, pyrazolyl, imidazolyl, and tetrazolyl.
Preferred 5 to 6 membered heterocycles include, but are not
limited to, pyridinyl, pyrimidinyl, triazinyl, furanyl,

thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, tetrazolyl; Also included are fused ring and containing, for example, the above heterocycles.

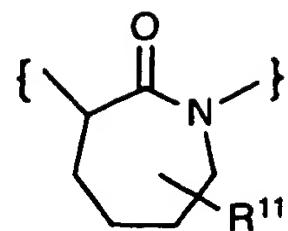
- 5 As used herein, the term "aryl", "C₆-C₁₀ aryl" or aromatic residue, is intended to mean an aromatic moiety containing the specified number of carbon atoms; for example phenyl, pyridinyl or naphthyl. Unless otherwise specified, "aryl" may be unsubstituted or substituted with
 10 0 to 3 groups selected from H, OH, OCH₃, Cl, F, Br, I, CN, NO₂, NH₂, N(CH₃)H, N(CH₃)₂, CF₃, OCF₃, C(=O)CH₃, SCH₃, S(=O)CH₃, S(=O)₂CH₃, CH₃, CH₂CH₃, CO₂H, and CO₂CH₃.

The phrase "additional lactam carbons", as used herein, is intended to denote the number of optional carbon
 15 atoms in the lactam ring B of Formula (I). Formula (Ia):

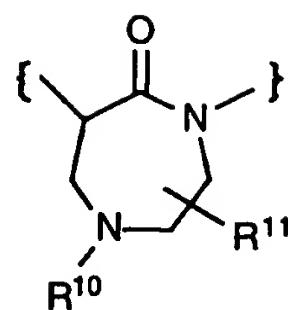


(Ia)

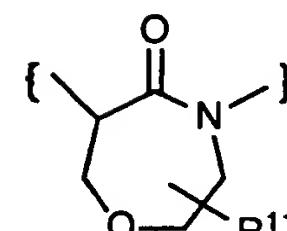
- represents the lactam ring B of Formula (I). Additional
 20 lactam carbons are carbons in lactam ring B other than the carbons numbered 2 and 3 in the backbone of the formula. The additional lactam carbons may be optionally replaced by a heteroatom selected from oxygen, nitrogen and sulfur. Lactam ring B contains 1, 2, 3, 4, 5, 6 or 7 optional
 25 carbons, wherein one optional carbon may optionally be replaced by a heteroatom, such that the total number of members of lactam ring B, including atoms numbered 1, 2 and 3 in the backbone, does not exceed 10. It is preferred that the total number of atoms of lactam ring B is 6, 7 or
 30 8; it is more preferred that the total number of atoms of lactam ring B is seven. Examples of lactam ring B include:



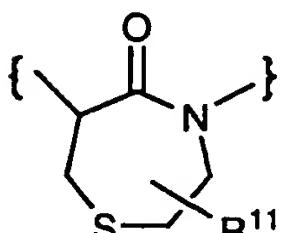
B1



B2

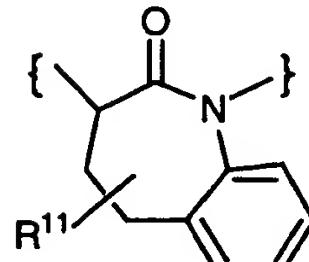


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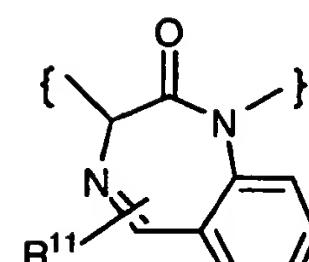


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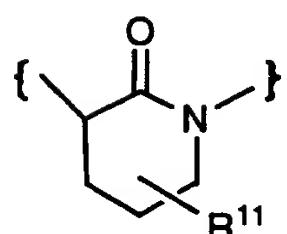
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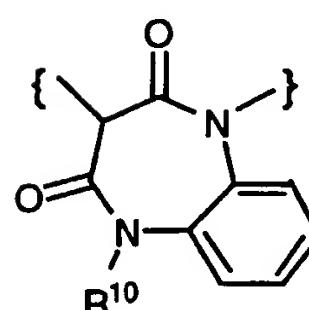
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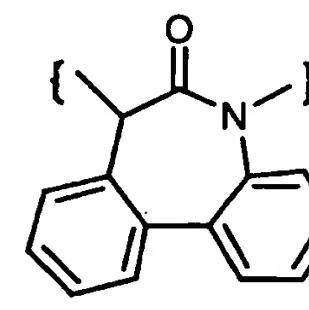
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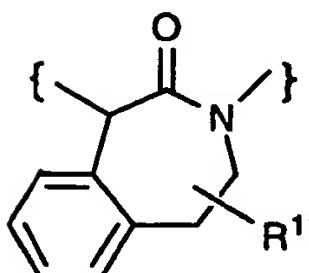
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B8

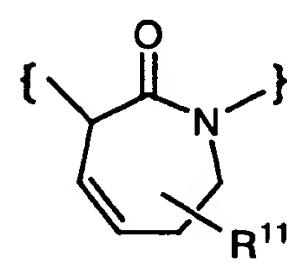


B9

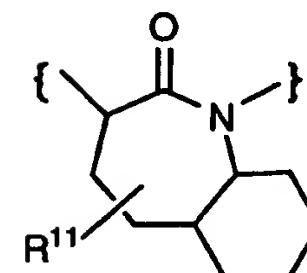


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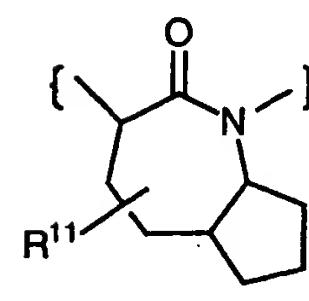
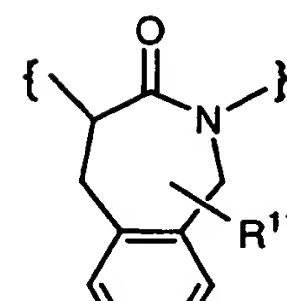
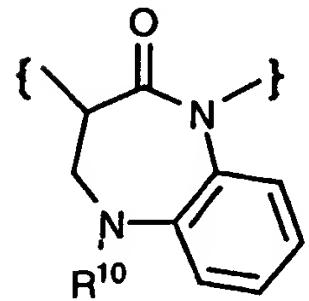
B10



B11



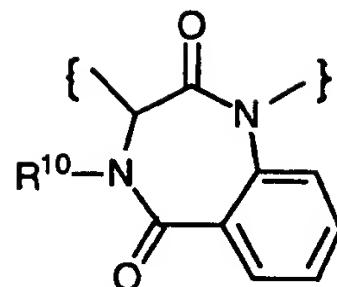
B12



B13

B14

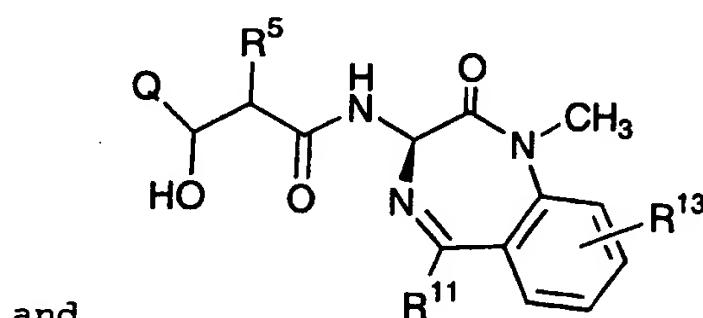
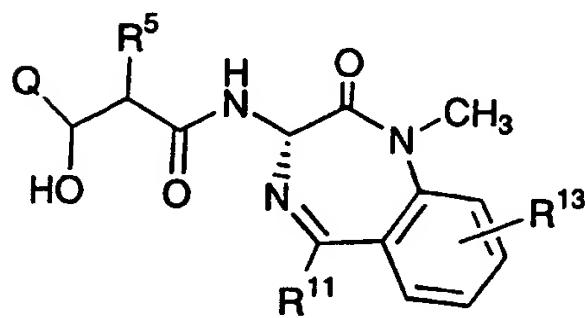
B15



B16

5 but are not intended to limit the invention. Preferred examples of lactam ring B are B1, B2, B5, B6, B8, B9, B13, and B16; more preferred examples of lactam ring B are B1, B6, B8, B9, and B13. Preferred examples of substituent R¹⁰ or R¹¹ on lactam B are methyl, ethyl, phenyl, 4-fluorophenyl, 4-chlorophenyl, 4-trifluorophenyl, (4-fluorophenyl)methyl, (4-chlorophenyl)methyl, and (4-trifluorophenyl)methyl. Preferred examples of substituent R¹³ on fused rings of lactam B are methyl, fluoro, and chloro.

15 The compounds herein described may have asymmetric centers. One enantiomer of a compound of Formula (I) may display superior biological activity over the opposite enantiomer. For example carbon 3 of lactam ring B Formula (I") may exist in either an S or R configuration. Thus, an 20 R or S configuration at carbon 3 in Formula (I") is considered part of the invention. An example of such configuration includes,



and

25

but is not intended to be limited to this example of ring B. When required, separation of the racemic material can be achieved by methods known in the art. Additionally, the

carbon atoms to which the OH and R⁵ are attached may describe chiral carbons which may display superior biological activity over the opposite enantiomer. For example, where Q and R⁵ are not H, then the configuration 5 of the two centers may be described as (2R,3R), (2R,3S), (2S,3R), or (2S,3S). All configurations are considered part of the invention; however, the (2R,3S) and the (2S,3R) are preferred and the (2R,3S) is more preferred.

The phrase "pharmaceutically acceptable" is employed 10 herein to refer to those compounds, materials, compositions, and/or dosage forms which are, within the scope of sound medical judgment, suitable for use in contact with the tissues of human beings and animals without excessive toxicity, irritation, allergic response, 15 or other problem or complication, commensurate with a reasonable benefit/risk ratio.

As used herein, "pharmaceutically acceptable salts" refer to derivatives of the disclosed compounds wherein the parent compound is modified by making acid or base salts 20 thereof. Examples of pharmaceutically acceptable salts include, but are not limited to, mineral or organic acid salts of basic residues such as amines; alkali or organic salts of acidic residues such as carboxylic acids; and the like. The pharmaceutically acceptable salts include the 25 conventional non-toxic salts or the quaternary ammonium salts of the parent compound formed, for example, from non-toxic inorganic or organic acids. For example, such conventional non-toxic salts include those derived from inorganic acids such as hydrochloric, hydrobromic, 30 sulfuric, sulfamic, phosphoric, nitric and the like; and the salts prepared from organic acids such as acetic, propionic, succinic, glycolic, stearic, lactic, malic, tartaric, citric, ascorbic, pamoic, maleic, hydroxymaleic, phenylacetic, glutamic, benzoic, salicylic, sulfanilic, 35 2-acetoxybenzoic, fumaric, toluenesulfonic, methanesulfonic, ethane disulfonic, oxalic, isethionic, and the like.

The pharmaceutically acceptable salts of the present invention can be synthesized from the parent compound which contains a basic or acidic moiety by conventional chemical methods. Generally, such salts can be prepared by reacting 5 the free acid or base forms of these compounds with a stoichiometric amount of the appropriate base or acid in water or in an organic solvent, or in a mixture of the two; generally, nonaqueous media like ether, ethyl acetate, ethanol, isopropanol, or acetonitrile are preferred. Lists 10 of suitable salts are found in *Remington's Pharmaceutical Sciences*, 17th ed., Mack Publishing Company, Easton, PA, 1985, p. 1418, the disclosure of which is hereby incorporated by reference.

"Prodrugs" are intended to include any covalently 15 bonded carriers which release the active parent drug according to formula (I) *in vivo* when such prodrug is administered to a mammalian subject. Prodrugs of a compound of formula (I) are prepared by modifying functional groups present in the compound in such a way 20 that the modifications are cleaved, either in routine manipulation or *in vivo*, to the parent compound. Prodrugs include compounds of formula (I) wherein a hydroxy, amino, or sulfhydryl group is bonded to any group that, when the prodrug or compound of formula (I) is administered to a 25 mammalian subject, cleaves to form a free hydroxyl, free amino, or free sulfhydryl group, respectively. Examples of prodrugs include, but are not limited to, acetate, formate and benzoate derivatives of alcohol and amine functional groups in the compounds of formula (I), and the like.

30 "Stable compound" and "stable structure" are meant to indicate a compound that is sufficiently robust to survive isolation to a useful degree of purity from a reaction mixture, and formulation into an efficacious therapeutic agent.

35

SYNTHESIS

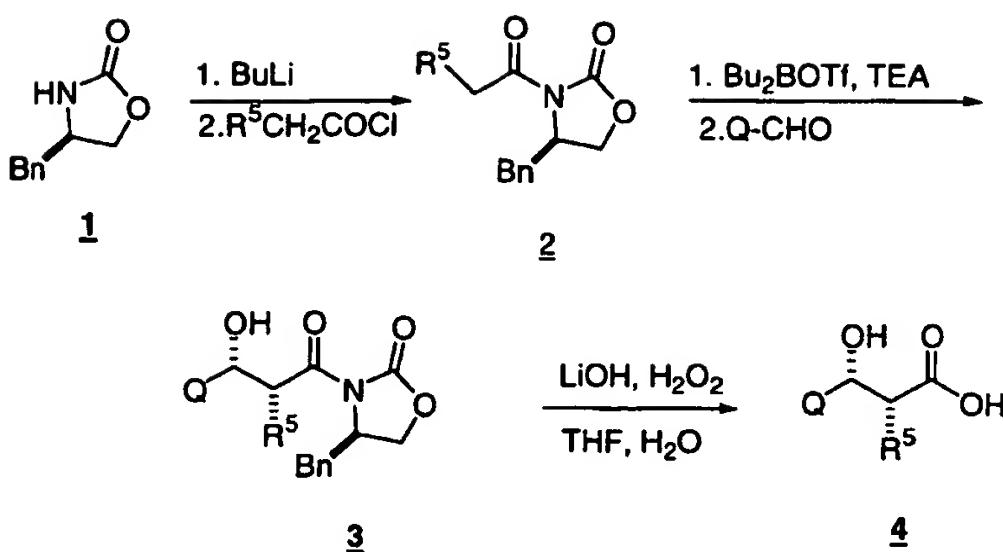
The compounds of the present invention can be prepared in a number of ways well known to one skilled in the art of

organic synthesis. The compounds of the present invention can be synthesized using the methods described below, together with synthetic methods known in the art of synthetic organic chemistry, or variations thereon as

- 5 appreciated by those skilled in the art. Preferred methods include, but are not limited to, those described below. All references cited herein are hereby incorporated in their entirety by reference.

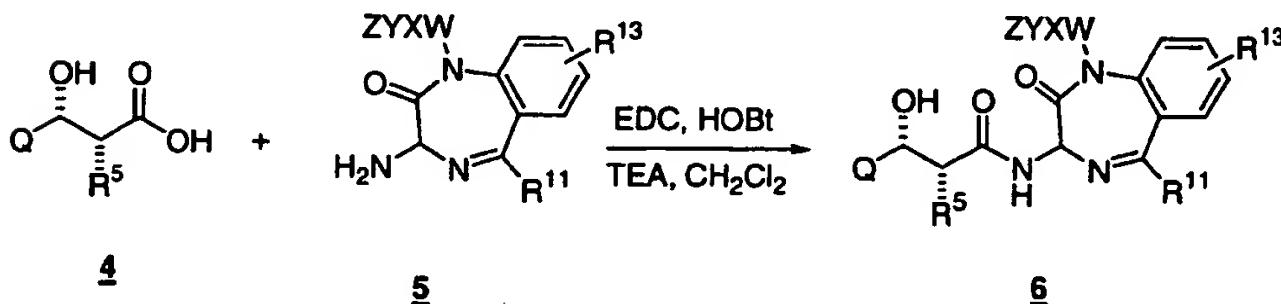
The novel compounds of this invention may be prepared
10 using the reactions and techniques described in this section. The reactions are performed in solvents appropriate to the reagents and materials employed and are suitable for the transformations being effected. Also, in the description of the synthetic methods described below,
15 it is to be understood that all proposed reaction conditions, including choice of solvent, reaction atmosphere, reaction temperature, duration of the experiment and workup procedures, are chosen to be the conditions standard for that reaction, which should be
20 readily recognized by one skilled in the art. It is understood by one skilled in the art of organic synthesis that the functionality present on various portions of the molecule must be compatible with the reagents and reactions proposed. Such restrictions to the substituents which are
25 compatible with the reaction conditions will be readily apparent to one skilled in the art and alternate methods must then be used.

Scheme 1



Aldol derivatives can be prepared by the procedure of Evans (D. A. Evans et al, *Org. Synth.* 1990, 68, 83-90), which is outlined in Scheme 1 where acylation of an oxazolidinone with an acid chloride provides structure 2. Asymmetric aldol reaction to form 3 followed by cleavage of the chiral auxiliary yielding β -hydroxycarboxylic acid 4. Additional examples are found in D. A. Evans *Aldrichimica Acta* 1982, 15, 23-32. Alternative syntheses of structures 4 can be accomplished by the methods of Crimmins (M. T. Crimmins et al, *J. Am. Chem. Soc.* 1997, 119, 7883-7884), Paterson (I. Paterson et al, *Org. React.* 1997, 51, 1-200) and Mukaiyama (T. Mukaiyama et al, *Org. React.* 1994, 1-104). Anti-aldols may be synthesized according to: (a) A. K. Ghosh, *J. Am. Chem. Soc.* 1996, 118, 2527-2528, or (b) S. Masamune et al., *J. Am. Chem. Soc.* 1997, 119, 2586.

Scheme 2



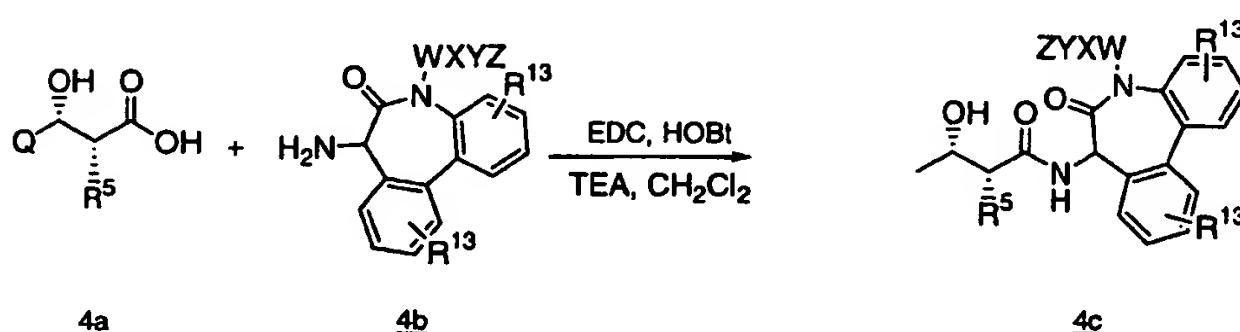
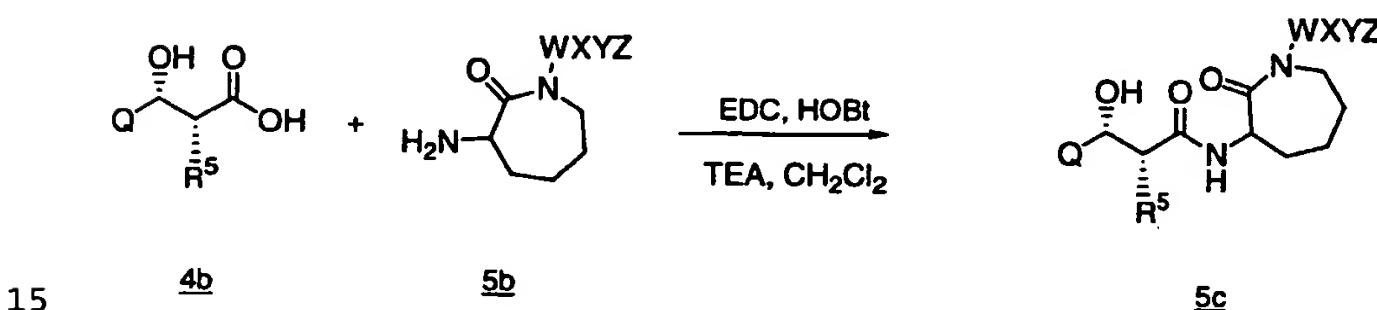
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Carboxylic acids of formula 4 can be coupled to an appropriate lactam intermediate using methods commonly used in peptide syntheses, such as DCC, EDC, CDI, BOP, PyBOP, HATU, HBTU and phenyl ester mediated coupling, as

described in A. R. Chamberlin, *Chem. Rev.* **1997**, *97*, 2243-2266. Compound **6** is synthesized, as illustrated in Scheme 2, by coupling acid **4** with 3-amino-1,4-benzodiazepin-2-one **5** under the catalysis of EDC and HOBt providing the final compound **6** (S. Nozaki et al, *Bull. Chem. Soc. Jpn.* **1982**, *55*, 2165-2168).

Similarly, Schemes 2a and 2b illustrate synthesis of bisbenzodiazepine and lactam compounds of the present invention:

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Scheme 2a**Scheme 2b**

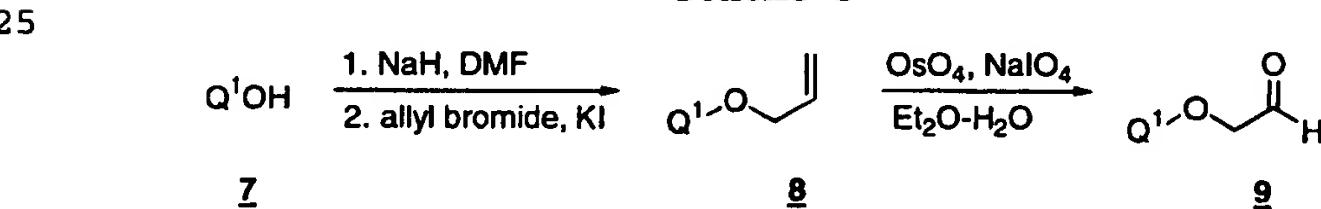
Methods for the synthesis of lactam intermediates as contemplated by the present invention useful in the synthesis of compounds of Formula (I), including amino

20 benzodiazepinones, dibenzo azepinones and other related heterocycles, are known in the art and are disclosed in a number of references including PCT publication number WO 98/28268, WO 99/66934, WO 00/07995, and WO 00/38618, which are hereby incorporated by reference. Additional
25 references include Bock, et al, *J. Org. Chem.*, **1987**, *52*, 3232-3239; Sherrill et al, *J. Org. Chem.*, **1995**, *60*, 730-

734; and Walsh, D. A., *Synthesis*, September 1980, p.677; and Brown, et al., *Tetrahedron Letters*, 1971, 8, 667-670.

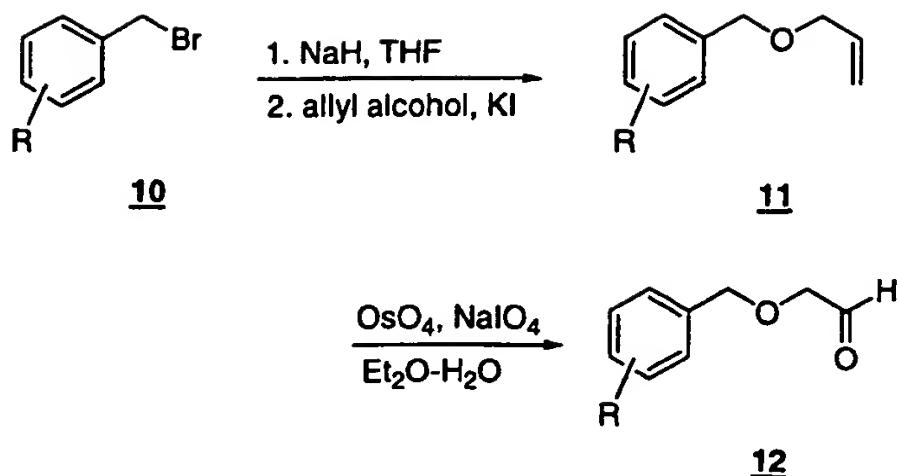
Synthetic approaches to aminobenzodiazepines are widely described in the literature and well known to one skilled in the art. The typical methods are illustrated, but are not limited to, the following references. See (a) M. G. Bock et al., *J. Org. Chem.*, 1987, 52, 3232; (b) R. G. Sherrill et al., *J. Org. Chem.*, 1995, 60, 734; (c) M. G. Bock et al., *J. Med. Chem.*, 1989, 32, 13-16; (d) J. L. Castro et al., *J. Med. Chem.*, 1997, 40, 2491-2501; (e) M. S. Chambers et al., *Bioorg. & Med. Chem. Lett.*, 1993, 3 (10), 1919-1924; (f) J. H. Gogerty et al., *J. Med. Chem.*, 1977, 20 (7), 952; (g) G. Semple et al., *Bioorg. & Med. Chem. Lett.*, 1996, 6(1), 51-54; (h) G. Semple et al., *J. Med. Chem.*, 1997, 40, 331-341; (i) G. Semple et al., *Bioorg. & Med. Chem. Lett.*, 1996, 6 (1), 55-58; (j) G. Semple et al., *Synth. Commun.*, 1996, 26 (4), 721-727; and (k) G. A. Showell et al., *J. Med. Chem.*, 1994, 37, 719-721. For general synthetic descriptions of 2-aminobenzophenone with various substitutions used in the preparation of benzodiazepine, see D. A. Walsh, *Synthesis* 1980, 677.

Scheme 3



The preparation of aldehyde $\text{Q}'\text{CHO}$ with general structure of 9 is shown in Scheme 3 (H. C. Arndt, *Synthesis* 1979, 202-204). Allyl ether 8 can be made from the action of an alkoxide generated in DMF with allyl bromide, which is converted to α -alkoxy- or aryloxyaldehyde 9 using a two-phase osmium tetroxide oxidation.

Scheme 4



As shown in Scheme 4, aldehyde Q-CHO of general structure 12 can be prepared in the same fashion from the corresponding allyl benzyl ether, which is readily available according to the procedure described by P. Kocienski (P. Kocienski *Tetrahedron* **1990**, *46*, 1767-1782).

The aldehydes used in Scheme 1 are either commercially available, prepared from commercially available or readily accessible alcohols, or prepared from commercially available or readily accessible carboxylic acids. For preparation of other non-commercially available aldehydes from commercially available or readily accessible alcohols by oxidation of the corresponding alcohols, see (a) S. V. Ley et al *Synthesis* **1994**, 639; (b) D. Swern, *Synthesis* **1981**, 165-185; and (c) R. C. Larock, *Comprehensive Organic Transformations*, Wiley-VCH: **1989**; pp604-614. For preparation of other non-commercially available aldehydes from commercially available or readily accessible carboxylic acids by reducing the corresponding Weinreb amides or reduction of carboxylic acid derivatives, see (a) S. M. Weinreb et al. *Tetrahedron Lett.* **1981**, *22*, 3815-3818; (b) M. Braun, *Synthesis* **1989**, 856; and (c) D. A. Evans, *J. Org. Chem.* **1993**, *58*, 2446-2453.

Aminoaldehydes used in the synthesis of the compounds of the invention may be prepared by oxidation of corresponding amino alcohols or reduction of corresponding amino acids; see (a) J. Jurczak et al., *Synlett* **1993**, 241; and (b) S. G. Davis et al., *Synlett* **1995**, 700.

Sulfur containing aldehydes used in the synthesis of compounds of the invention may be made by conjugate addition of a thiol to α,β -unsaturated aldehydes or reaction of a thiol with a halosubstituted aldehyde. See

- 5 T. Cohen et al., *J. Org. Chem.* 1995, 60, 2022; *Tetrahedron* 1994, 50, 12793-12810; *J. Org. Chem.* 1992, 57, 6; *Phosphorus, Sulfur, and Silicon* 1993, 74, 1; and *Tetrahedron* 1994, 50, 11569-11584.

Sulfoxides and sulfones are prepared from the corresponding sulfide by oxidation. See M. Hudlicky, *Oxidations in Organic Chemistry*, ACS, 1990; pp 250-264.

The acid chlorides used in Scheme 1 are either commercially available or prepared from commercially available or readily accessible carboxylic acids by the action of oxalyl chloride or thionyl chloride. See R. C. Larock, *Comprehensive Organic Transformations*, Wiley-VCH: 1989; pp963-964.

Examples

20 Chemical abbreviations used in the Examples are defined as follows: "DMPU" for 1,3-dimethyl-3,4,5,6-tetrahydro-2(1H)-pyrimidone; "TBTU" for O-(1H-benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate; "BOP" for benzotriazol-1-yloxytris-dimethylamino)-phosphonium hexafluorophosphate; "Bu₂BOTf" for dibutylboron triflate; "EDC" for 1-[3-(dimethylamine)propyl]-3-ethylcarbodiimide hydrochloride; "HOBr" for 1-hydroxybenzotriazole; and "TEA" for triethylamine.

"HPLC" is an abbreviation used herein for high pressure liquid chromatography. Compounds of the present invention are generally purified by HPLC using conditions known to one skilled in the art. However, unless otherwise indicated, the following conditions are generally applicable. Reverse-phase HPLC can be carried out using a 35 Vydac C-18 column with gradient elution from 10% to 100 % buffer B in buffer A (buffer A: water containing 0.1% trifluoroacetic acid, buffer B: 10% water, 90%

acetonitrile containing 0.1% trifluoroacetic acid). Alternatively, reverse-phase HPLC can be carried out using a Vydac C-18 column with gradient elution from 10% to 90 % acetonitrile in water.

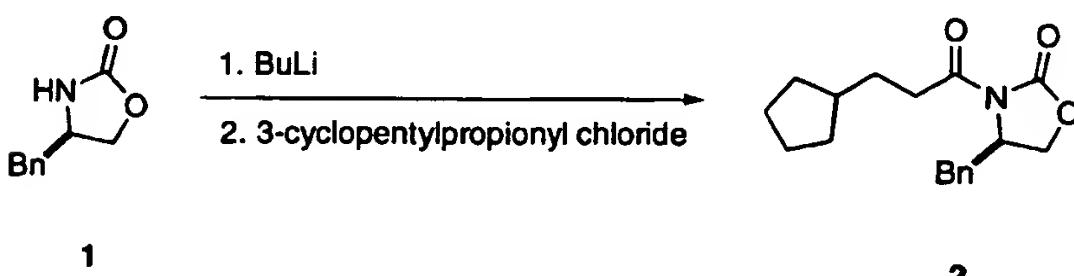
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Example 1.

3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one.

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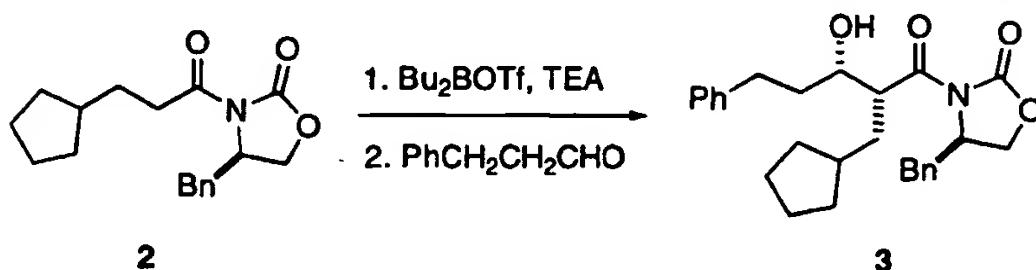
(R)-3-(3-cyclopentyl-1-oxopropyl)-4-(phenylmethyl)-2-oxazolidinone (**2**) .



A dry round bottom flask was charged with of (*R*)-4-(phenylmethyl)-2-oxazolidinone (1, 17.7 g, 0.100 mol). Anhydrous tetrahydrofuran (300 mL) was then added, and the solution was cooled to -78°C. A solution of butyllithium (42.0 mL, 0.105 mol, 2.50 M in hexane) was added to the reaction flask over a 10-min period. After a few minutes, 3-Cyclopentylpropionyl chloride (16.8 mL, 0.110 mol) was added. The resulting solution was stirred for 30 min at -78°C, then allowed to warm to ambient temperature over a 30-min period. Excess 3-cyclopentylpropionyl chloride was quenched by the addition of 60 mL of saturated aqueous ammonium chloride. The bulk of the tetrahydrofuran and hexane was removed on a rotary evaporator, and the slurry was extricated with two 80 mL portion of dichloromethane. The combined organic layers were washed with 75 mL of 1 M sodium hydroxide and 75 mL of brine, dried over anhydrous magnesium sulfate, and filtered. The solvent was removed under reduced pressure. The residue was triturated with hexane to provide 16.5 g of desired product **2** as a white solid. ^1H NMR (300 MHz, CDCl_3) δ 7.18 - 7.40 (5 H, m),

4.67 (1 H, m), 4.12 - 4.22 (2 H, m), 3.30 (1 H, dd, *J* = 13.4, 3.1 Hz), 2.84 - 3.06 (2 H, m), 2.76 (1 H, dd, *J* = 13.4, 9.6 Hz), 1.42 - 1.96 (9 H, m), 1.15 (2 H, br, m).

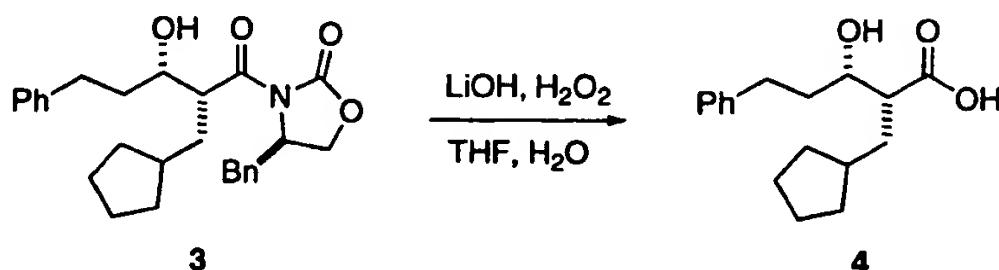
5 3-(2(*R*)-cyclopentylmethyl-3(*S*)-hydroxyl-5-phenyl-1-oxopentyl)-4(*R*)-(phenylmethyl)-2-oxazolidinone (3).



To a solution of acyloxazolidinone 2 (1.57 g, 5.00 mmol) in 20 mL of dichloromethane, cooled to -78°C under nitrogen atmosphere, dibutylboron triflate (1.40 mL, 5.50 mmol) was added dropwise, followed by the addition of triethylamine. The mixture was warmed slowly to 0°C and was stirred at 0°C for an additional hour. The resultant boryl enolate solution was then cooled to -78°C, and 3-phenylpropanal (0.80 mL, 5.5 mmol) was added over a 5-min period time. The solution was stirred for 1 h at -78°C, then for 1 h at 0°C. The reaction mixture was quenched by the addition of 4 mL of a pH 7 aqueous phosphate buffer and 12 mL of methanol. To this cloudy solution was added 8 mL of methanol and 10 mL of 30% aqueous hydrogen peroxide at such a rate as to keep the internal temperature below 10°C. After the solution was stirred for one additional hour, the volatile material was removed in a rotary evaporator. The resulting slurry was extracted with three 20 mL portions of diethyl ether. The combined organic layers was washed with 20 mL of 5% aqueous sodium bicarbonate and 20 mL of brine, dried over anhydrous magnesium sulfate, filtered and concentrated under reduced pressure. Purification by flash column chromatography (25% ethyl acetate - hexane) provided 1.11 g (56%) of aldol 3 as a colorless oil. ¹H NMR (300 MHz, CDCl₃) δ 7.15 - 7.38 (m, 10 H), 4.72 (m, 1 H), 4.12 - 4.28 (m, 3 H), 3.85 (m, 1 H),

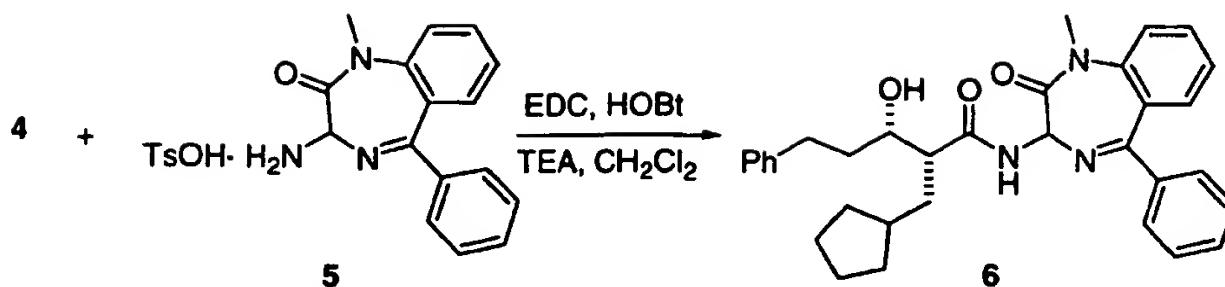
3.34 (1 H, dd, $J = 13.4, 3.1$ Hz); 2.80 - 2.95 (1 H, m),
 2.60 - 2.78 (2 H, m), 1.95 - 2.05 (1 H, m), 1.40 - 1.90
 (10 H, m), 1.10 (2 H, m).

5 2(R)-cyclopentylmethyl-3(S)-hydroxyl-5-phenylpentanoic acid (4).



Acyloxazolidinone 3 (226 mg, 0.500 mmol) was dissolved in 3 mL of THF and 1 mL of distilled water. The resulting solution was cooled to 0°C. To this solution was added 30% aqueous hydrogen peroxide (0.40 mL, 4.0 mmol), followed by a solution of lithium hydroxide (19 mg, 0.80 mmol) in 0.5 mL of distilled water. After the solution was stirred for 16 h, sodium sulfite (567 mg, 4.50 mmol) in 3 mL of distilled water was added. The bulk of tetrahydrofuran was removed under reduced pressure, and the resulting mixture (pH 12 ~ 13) was extracted with three 20 mL portion of methylene chloride to remove the oxazolidinone auxiliary. The aqueous layer was cooled in an ice bath and acidified to pH 1 with 6 M aqueous hydrochloric acid. The resulting cloudy solution was extracted with five portion of 30 mL ethyl acetate. The combined organic layers are dried over anhydrous magnesium sulfate, filtered and concentrated under reduced pressure to yield 230 mg (81%) of the desired acid 4 as a white solid. ^1H NMR (300 MHz, CDCl_3) δ 7.18 - 7.35 (5 H, m), 3.87 (1 H, m), 2.81 - 2.87 (1 H, m), 2.60 - 2.76 (1 H, m); 2.54 - 2.60 (1 H, m), 1.00 - 1.95 (m, 13 H).

30 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl- 5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one (6).



A mixture of acid **4** (250 mg, 0.900 mmol) and 3-amino-1-methyl- 5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one **p**-toluenesulfonate salt (364 mg, 0.820 mmol) in 4 mL of methylene chloride was stirred at 0°C. 1-Hydroxy-benzotriazole hydrate (133 mg, 0.980 mmol), 1-[3-(dimethylamine)propyl]-3-ethylcarbodiimide hydrochloride (314 mg, 1.64 mmol) and triethylamine (0.51 mL, 3.7 mmol) were added sequentially. After the mixture was stirred for 16 h, 30 mL of ethyl acetate was added. The organic layer was washed with 1 M HCl (15 mL), 5% NaHCO₃ (30 mL) and brine (30 mL), dried over anhydrous magnesium sulfate and concentrated under reduced pressure. Purification by chromatotron (30% ethyl acetate - hexane) afforded two diastereomers **A** and **B**. **A**: 120 mg (25%); ¹H NMR (300 MHz, CDCl₃) δ 7.20 – 7.70 (15 H, m), 5.54 (1 H, d, *J* = 8.0 Hz), 4.02 (1 H, m), 3.48 (3 H, s), 2.83 – 3.00 (1 H, m), 2.62 – 2.74 (1 H, m), 2.40 – 2.48 (1 H, m), 1.00 – 2.00 (13 H, m); MS (ESI): 524 (M+H), 546 (M+Na), 522 (M-H), 558 (M+Cl). **B**: 120 mg (25%); ¹H NMR (300 MHz, CDCl₃) δ 7.60 (1 H, d, *J* = 6.9 Hz), 7.20 – 7.45 (14 H, m), 5.56 (1 H, d, *J* = 8.4 Hz), 3.84 (1 H, m), 3.48 (3 H, s), 2.83 – 3.00 (1 H, m), 2.62 – 2.74 (1 H, m), 2.50 – 2.60 (1 H, m), 1.00 – 1.95 (13 H, m); MS (ESI): 524 (M+H), 546 (M+Na), 522 (M-H).

Examples 2-135

The general procedure for Example 1 was followed using the corresponding acid chloride, aldehyde, and substituted benzodiazepine, azepane or bisbenzodiazepine. Starting materials were either commercially available or prepared by methods known to one skilled in the art.

Example 2. 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-(4-fluoro-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 542 (M+H).

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Example 3. 3-(2(R)-Benzyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 532 (M+H).

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Example 4. 3-(2(R)-Isopropyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 484 (M+H).

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Example 5. 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-4-(3,5-difluorophenoxy)butyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 562 (M+H).

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Example 6. 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-(3,5-difluorophenoxy)butyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 536 (M+H).

Example 7. 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 560 (M+H).

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Example 8. 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-(4-fluorophenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 552 (M+H).

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Example 9. 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 464 (M+H).

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Example 10. 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 506 (M+H).

Example 11. 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 492 (M+H).

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Example 12. 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 534 (M+H).

10 **Example 13.** 3-(2(R)-Benzyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 574 (M+H).

15 **Example 14.** 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 566 (M+H).

20 **Example 15.** 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 540 (M+H).

Example 16. 3-(2(R)-Isopropyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 526 (M+H).

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Example 17. 3-(2(R)-Methoxy-3(S)-hydroxyl-1-oxo-4-(4-trifluoromethylbenzyloxy)butyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 590 (M+H).

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Example 18. 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-(2,4-difluorobenzyloxy)butyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 542 (M+H).

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Example 20. 3-(2(R)-Vinyl-3(S)-hydroxyl-1-oxo-4-benzyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 536 (M+H).

5 **Example 21.** 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 498 (M+H).

10 **Example 23.** 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 498 (M+H).

15 **Example 24.** 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-3-cyclopropylpropyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 434 (M+H).

20 **Example 25a.** 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-heptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 450 (M+H).

20 **Example 25b.** 3-(R)-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-heptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 450 (M+H).

25 **Example 25c.** 3-(S)-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-heptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 450 (M+H).

30 **Example 26.** 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-nonyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 478 (M+H).

35 **Example 27.** 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxohexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 436 (M+H).

Example 28. 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-phenylbutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 484 (M+H).

5 **Example 29.** 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 442 (M+H).

10 **Example 30.** 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-6-phenylhexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 470 (M+H).

15 **Example 31.** 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-butyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 408 (M+H).

20 **Example 32.** 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-octyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 464 (M+H).

Example 33. 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-heptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 408 (M+H).

25 **Example 34.** 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-3-phenylpropyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 428 (M+H).

30 **Example 35.** 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-5,5-dimethyl-hexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 422 (M+H).

35 **Example 36.** 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-hexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 394 (M+H).

Example 37. 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-3-(4-propoxyphenyl)propyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 486 (M+H).

5 **Example 38.** 2-(R)-cyclopropylmethyl-3-(S)-hydroxylheptanoic acid (2-oxo-1-(3-phenoxybenzyl)azapan-3-(S)-yl) amide. MS (ESI): 493 (M+H), 491 (M-H), 527 (M+Cl).

10 **Example 39.** 2(R)-cyclopropylmethyl-5-(3,5-difluorophenyl)-3-(S)-hydroxypentanoic acid (2-oxo-1-(3-phenoxybenzyl)azapan-3-(S)-yl) amide. MS (ESI): 577 (M+H), 575 (M-H), 599 (M+Na).

15 **Example 40.** 4-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxybutanoic acid (2-oxo-1-(3-phenoxybenzyl)azapan-3-(S)-yl) amide. MS (ESI): 519 (M+H), 541 (M+Na), 517 (M-H).

20 **Example 41.** 2-(R)-cyclopropylmethyl-3-(S)-hydroxyheptanoic acid (1-(5-bromo-3-pyridinyl)methyl-2-oxo-azapan-3-(S)-yl) amide. MS (ESI): 480 (M(⁷⁹Br)+H), 482 (M(⁸¹Br+H), 478 (M(⁷⁹Br)+H), 480 (M(⁸¹Br)-H).

25 **Example 42.** 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 466 (M+H), 488 (M+Na), 464 (M-H). Chromatography Note b and Note c.

30 **Example 43.** 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(azapan-1-yl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 469 (M+H), 491 (M+Na), 467 (M-H). Chromatography Note b and Note c.

35 **Example 44.** 3-(2-(R)-cyclopropylmethyl-5-(3,5-difluorophenyl)-3(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(pyridin-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 533 (M+H), 555 (M+Na), 531 (M-H). Chromatography Note b and Note c.

The 3-(3,5-difluorophenyl)propanal used in the aldol reaction was prepared from trans-3,5-difluorocinnamic acid by: (1) hydrogenation to 3-(3,5-difluorophenyl)propionic acid (L. Kruse et al J. Med. Chem. 1987, 30, 486-494); (2) formation of Weinreb amide (M. Braun Synthesis 1989, 856); and (3) reduction to aldehyde (D. A. Evans J. Org. Chem. 1993, 58, 2446-2453).

Example 45. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(4-chlorophenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 482 (M+H), 504 (M+Na), 480 (M-H). Chromatography Note i and Note k.

Example 46. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-methoxyphenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 466 (M+H), 488 (M+Na), 464 (M-H). Chromatography Note b and Note c.

Example 47. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-methoxyphenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 479 (M+H), 500 (M+Na), 476 (M-H). Chromatography Note m.

Example 48. 3-(S)-(4-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxobutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 474 (M+H), 496 (M+Na), 472 (M-H).

Example 49. 3-(S)-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxohept-6-enyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 446 (M+H), 468 (M+Na), 444 (M-H).

Example 50. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxohept-6-enyl)amino-1-methyl-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 514 (M+H). Chromatography Note i.

Example 51. 3-(S)-(2-(R)-cyclopropylmethyl-5-(3,5-dimethylisoxazol-4-yl)-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one.

5 MS (ESI): 515 (M+H), 537 (M+Na), 513 (M-H).

The 3-(3,5-dimethyl-4-isoxazole)propanal used in the aldol reaction was prepared from: (1) methyl 3-(3,5-dimethyl-4-isoxazole)propionate (M. C. Marcotullio J. Org. Chem 1994, 59, 2884); (2) DIBAL-H reduction to alcohol (N. 10 M. Yoon et al J. Org. Chem. 1985, 50, 2443-2450); and (3) TPAP/NMO oxidation to aldehyde (S. V. Ley et al Synthesis 1994, 639).

Example 52. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-

15 oxoheptyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 482 (M+H), 504 (M+Na), 480 (M-H). Chromatography Note n and Note o.

Example 53. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-

20 oxoheptyl)amino-1-methyl-(pyridin-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 449 (M+H), 471 (M+Na), 447 (M-H). Chromatography Note b and Note c.

Example 54. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-

25 oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 466 (M+H), 500 (M+C1). Chromatography Note h.

Example 55. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-

30 oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 516 (M+H), 514 (M-H), 550 (M+C1). Chromatography Note i.

The 3-cyclopropyl propionic acid, which was converted

to 3-cyclopropyl propionyl chloride used in the aldol

35 reaction, was prepared according to: A. Donetti J. Med. Chem. 1972, 15, (6), 590-592.

Example 56. 3-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(pyridin-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 489 (M+H), 511 (M+Na), 487 (M-H). Chromatography Note b and

5 Note c.

Example 57. 3-(2-(R)-iso-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 518 (M+H),
10 540 (M+Na), 516 (M-H). Chromatography Note b and Note c.

Example 58. 3-(S)-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxo-5-(thiophen-2-yl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 502 (M+H), 524
15 (M+Na), 500 (M-H).

Example 59. 3-(S)-(2-(R)-cyclopropylmethyl-5-(furan-2-yl)3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 486 (M+H),
20 508 (M+Na), 484 (M-H).

Example 60. 3-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 506
25 (M+H), 528 (M+Na), 504 (M-H). Chromatography Note h.

Example 61. 3-(S)-(2-(R)-cyclopropylmethyl-5-(3,5-difluorophenyl)-3-(S)-hydroxy-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one.
30 MS (ESI): 532 (M+H), 554 (M+Na), 530 (M-H).

Example 62. 3-(S)-(3-(S)-hydroxyl-2-(R)-(thiophen-2-yl)methyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 448 (M+H), 470
35 (M+Na), 446 (M-H).

Example 63. 3-(S)-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-7-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 490 (M+H), 512 (M+Na), 488 (M-H).

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Example 64. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-7-methoxy-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 478 (M+H), 500 (M+Na), 476 (M-H). Chromatography Note 1.

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Example 65. 3-(S)-(2-(R)-cyclobutylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 462 (M+H), 484 (M+Na).

The 3-cyclobutyl propionic acid, which was converted
15 to 3-cyclobutyl propionyl chloride used in the aldol
reaction, was prepared according to: A. Donetti J. Med.
Chem. 1972, 15, (6), 590-592.

Example 66. 3-(S)-(2-(R)-(3,5-difluorobenzyl)-3-(S)-
20 hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-
1H-1,4-benzodiazepin-2-one. MS (ESI): 520 (M+H), 518 (M-
H).

Example 67. 3-(S)-(2-(R)-(furan-2-yl)methyl-3-(S)-
25 hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-
1H-1,4-benzodiazepin-2-one. MS (ESI): 474 (M+H), 472 (M-H).

Example 68. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-
oxo-5-pheylpentyl)amino-1-methyl-5-(pyridin-2-yl)-2,3-
30 dihydro-1H-benzodiazepin-2-one. MS (ESI): 514 (M+H), 536
(M+Na), 512 (M-H). Chromatography Note h.

Example 69. 3-(2-(R)-iso-butyl-3-(S)-hydroxyl-1-
oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-
35 1,4-benzodiazepin-2-one. MS (ESI): 497 (M+H), 519 (M+Na),
495 (M-H). Chromatography Note b and Note c.

Example 70. 3-(2-(R)-iso-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 468 (M+H), 502 (M+Cl). Chromatography Note h.

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Example 71. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 421 (M+H), 443 (M+Na), 419 (M-H). Chromatography Note b and Note c.

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Example 72. 3-(2-(R)-cyclopropylmethyl-5-(furan-2-yl)-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 554 (M+H), 576 (M+Na), 552 (M-H).

15 Chromatography Note i.

Example 73. 3-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 542 (M+H), 564 (M+Na), 540 (M-H).

20 Chromatography Note i.

Example 74. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxooctyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-

25 dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 530 (M+H), 552 (M+Na), 528 (M-H). Chromatography Note i.

Example 75. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxononyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-

30 dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 544 (M+H), 566 (M+Na), 542 (M-H). Chromatography Note i.

Example 76. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethyl(pyridin-2-

35 yl))-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 517 (M+H), 539 (M+Na), 515 (M-H). Chromatography Note i.

Example 77. 3-(2-(R)-cyclobutylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4(trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 530 (M+H), 552 (M+Na), 528 (M-H). Chromatography Note i.

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Example 78. 3-(2-(R)-cyclopentylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 544 (M+H), 542 (M-H), 578 (M+Cl). Chromatography Note i.

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Example 79. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-methyl-2-pyridyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 463 (M+H). Chromatography Note cc.

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Example 80. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-methyl-2-pyridyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 463 (M+H). Chromatography Note dd.

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Example 81. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxobutyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 474 (M+H). Chromatography Note i.

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Example 82. 3-(S)-(2-(R)-(3-butenyl)-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 448 (M+H).

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Example 83. 3-(S)-(2-(R)-(3-methylbutyl)3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 464 (M+H).

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Example 84. 3-(S)-(2-(R)-ethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 422 (M+H).

Example 85. 3-(S)-(2-(R)-propyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 436 (M+H).

5 **Example 86.** 3-(S)-(2-(R)-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 450 (M+H).

10 **Example 87.** 3-(4-(S)-amino-3-(R)-hydroxyl-2-(R)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one.
MS (ESI): 523 (M+H), 521 (M-H). Chromatography Note x.

15 **Example 88.** 3-(4-(S)-(tert-butoxycarbonylamino-3-(R)-hydroxyl-2-(R)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 645 (M+H), 621 (M-H).
Chromatography Note a and Note u.

20 **Example 89.** 3-(3-(tert-butoxycarbonylpyrrolidin-2-(R)-yl)-3-(R)-hydroxyl-2-(R)-methyl-1-oxopropyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 523 (M+H), 521 (M-H). Chromatography Note u and Note v.

25 **Example 90.** 3-(3-(R)-hydroxyl-2-(R)-methyl-1-oxo-3-(pyrrolidin-2-(R)-yl)propyl)-amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 473 (M+H), 471 (M-H). Chromatography Note y and Note z.

30 **Example 91.** 3-(4-benzyloxy-3-(R)-hydroxyl-2-(R)-iso-propyl-1-oxobutyl-amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 534 (M+H), 556 (M+Na), 532 (M-H). Chromatography Note u and Note v.

Example 92. 2-(4-(S)-amino-3-(S)-hydroxyl-2-(S)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one.

MS (ESI): 523 (M+H), 521 (M-H). Chromatography Note w.

5

Example 93. 2-(4-(S)-(tert-butoxycarbonylamino-3-(S)hydroxyl-2-(S)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 645 (M+Na), 621 (M-H).

10 Chromatography Note a and Note v.

Example 94. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(thiazol-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 455 (M+H), 477 (M+Na),

15 453 (M-H). Chromatography Note b and Note c.

The benzodiazepine was made from 2-aminophenyl-2'thiazolylketone (see A. Furstner et al., *Tetrahedron* 1995, 51 (3), 773-786) following the synthetic sequence from: R. G. Sherrill et al., *J. Org. Chem.* 1995, 60, 734.

20

Example 95. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-cyclopropylmethyl-5-(thiazol-2-yl)-2,3-dihydro-1H-1,4benzodiazepin-2-one. MS (ESI): 495 (M+H), 517 (M+Na), 493 (M-H). Chromatography Note c.

25

The benzodiazepine was made from 2-aminophenyl-2'thiazolylketone (see A. Furstner et al., *Tetrahedron* 1995, 51 (3), 773-786) following the synthetic sequence from: R. G. Sherrill et al., *J. Org. Chem.* 1995, 60, 734.

30

Example 96. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-cyclopropylmethyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 556 (M+H), 578 (M+Na), 554 (M-H).

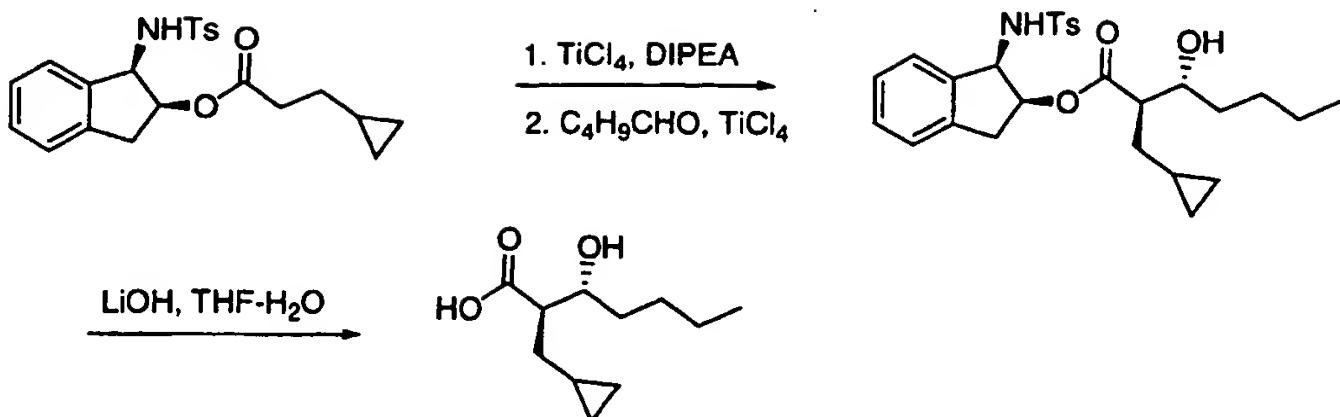
Chromatography Note j and Note p.

35

Example 97. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-(4-trifluoromethylphenyl)-2,3-

dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 592 (M+H), 614 (M+Na), 590 (M-H). Chromatography Note b and Note c.

- 5 **Example 98.** 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-phenoxybenzyl)-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 684 (M+H), 706 (M+Na), 682 (M-H). Chromatography Note q and Note r.
- 10 **Example 99.** 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-pyridinylmethyl)-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 593 (M+H), 615 (M+Na), 519 (M-H). Chromatography Note q and Note r.
- 15 **Example 100.** 3-(2-(S)-cyclopropylmethyl-3-(R)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 516 (M+H), 538 (M+Na), 514 (M-H). Chromatography Note i.
- 20 The syn-alcohol was made according to Scheme 1, except that (S)-4-(phenylmethyl)-2-oxazolidinone was used instead of the (R)-isomer shown in Scheme 1.
- 25 **Example 101.** 3-(2-(S)-cyclopropylmethyl-3-(R)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 516 (M+H), 538 (M+Na), 514 (M-H). Chromatography Note k.
- 30 The syn-alcohol was made according to Scheme 1, except that (S)-4-(phenylmethyl)-2-oxazolidinone was used instead of the (R)-isomer shown in Scheme 1.
- 35 **Example 102.** 3-(2-(R)-cyclopropylmethyl-3-(R)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 516 (M+H), 538 (M+Na), 514 (M-H). Chromatography Note i.



The anti-aldols were made by the method described in:

- A. K. Ghosh, *J. Am. Chem. Soc.* **1996**, 118, 2527-2528. The carboxylic acid shown was coupled with the corresponding 5 benzodiazepine following a procedure analogous to the procedure of the last step in Example 1.

- Example 103.** 3-(2-(S)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 516 ($\text{M}+\text{H}$), 10 538 ($\text{M}+\text{Na}$), 514 ($\text{M}-\text{H}$). Chromatography Note i.

Followed the synthetic sequence of Example 102, except the opposite enantiomer of the chiral auxiliary was used.

- 15 **Example 104.** 3-(2-(S)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 516 ($\text{M}+\text{H}$), 514 ($\text{M}-\text{H}$). Chromatography Note k.

Followed the synthetic sequence of Example 102, except 20 the opposite enantiomer of the chiral auxiliary was used.

- Example 105.** 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-3-(S)-methyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 25 530 ($\text{M}+\text{H}$), 552 ($\text{M}+\text{Na}$), 528 ($\text{M}-\text{H}$). Chromatography Note i.

Addition of a methyl group to Example 135 was performed with an organocerium reagent generated from methylmagnesium bromide and cerium trichloride according to: T. Imamoto et al (a) *J. Org. Chem.* **1984**, 49, 3904-3912, 30 and (b) *J. Am. Chem. Soc.* **1989**, 111, 4392-4398.

Example 106. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-phenoxybenzyl)-5-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 554 (M+H).

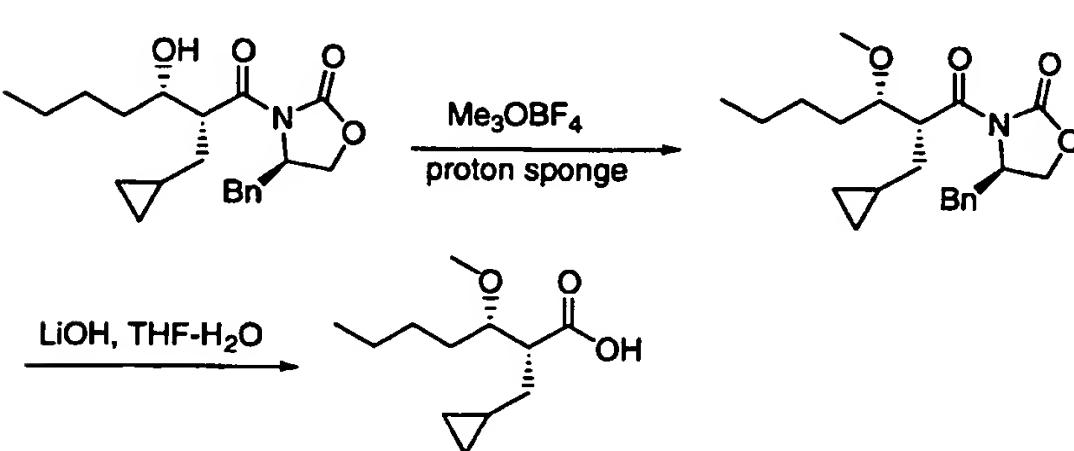
5 Chromatography Note aa and Note bb.

Example 107. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 462 (M+H). Chromatography

10 Note b and Note c.

Example 108. 3-(3-(S)-acetoxy-2-(R)-iso-butyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 510 (M+H), 532 (M+Na), 15 508 (M-H). Chromatography Note h.

Example 109. 3-(S)-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-methoxy-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 502 (M+H), 20 524 (M+Na).



Methylation of the corresponding aldol was carried out according to: (a) D. A. Evans et al., *Tetrahedron Lett.*

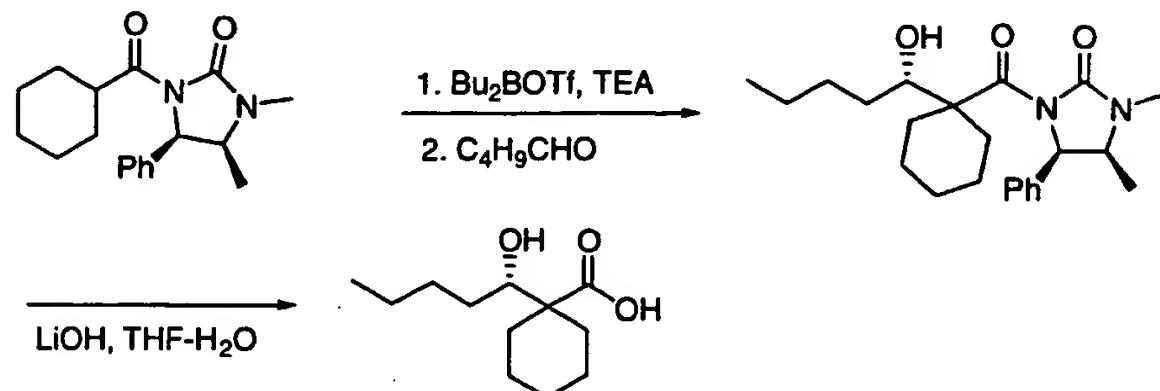
1994, 35 (39), 7171-7172; (b) G. R. Pettit, *Synthesis* 1996,

25 719-725. The carboxylic acid shown was then coupled with the corresponding benzodiazepine following a procedure analogous to the procedure of the last step in Example 1.

Example 113. 1-(1-hydroxypentyl)cyclohexanecarboxylic

30 acid(5-(4-fluorophenyl)-1-methyl-2-oxo-2,3-dihydro-1H-1,4-

benzodiazepin-3-yl)amide. MS (ESI): 480 (M+H), 502 (M+Na), 478 (M-H). Chromatography Note t and Note h.



The corresponding aldol was made according to (a) A. S. Kende et al., *Tetrahedron Lett.* **1989**, 30 (43), 5821-5824; (b) H. Mulzer et al., *Tetrahedron Lett.* **1995**, 36 (42), 7643-7646. The carboxylic acid shown was coupled with benzodiazepine following a procedure analogous to the procedure of the last step in Example 1.

10

Example 114. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one.

MS (ESI): 421 (M+H), 443 (M+Na), 419 (M-H). Chromatography Note s.

15

Example 115. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxooctyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one.

MS (ESI): 435 (M+H), 457 (M+Na), 433 (M-H). Chromatography Note s.

20

Example 116. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxononyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one.

MS (ESI): 449 (M+H), 471 (M+Na), 447 (M-H). Chromatography Note s.

25

Example 117. 3-(2-(R)-cyclopropylmethyl-5-(furan-2-yl)-3-(S)-hydroxyl-1-oxopentyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one. MS (ESI): 459 (M+H), 481 (M+Na), 457 (M-H). Chromatography Note s.

30

Example 118. 2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-heptanoic acid (2-oxo-1-(3-phenylamino-benzyl)azepan-3-(S)-yl) amide. MS (ESI): 492 (M+H), 514 (M+Na), 490 (M-H).

Step 1: [2-Oxo-1-(3-phenylamino-benzyl)-azepan-3-yl]-carbamic acid tert-butyl ester: In a 100 ml round bottomed flask Binap, (S)-(-)2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl, (0.210 g, 0.3375 mmol) dissolved in 15mL toluene was stirred at 80°C for 1 minute. To the flask cooled to room temperature under inert atmosphere Pd(OAc)₂ (0.050 g, 0.225 mmol) was added and the solution was stirred at room temperature for 2 minutes. To the reaction mixture [1-(3-Iodo-benzyl)-2-oxo-azepan-3-yl]-carbamic acid tert-butyl ester (1.0 g, 2.25 mmol) dissolved in 15mL toluene, aniline (1.047 g, 11.25 mmol) and Sodium tert-butoxide (0.259 g, 2.70 mmol) were added and the solution was stirred at 80 °C for 18 h. The reaction was cooled to room temperature, diluted with 200mL of water, and extracted twice with 100 mL of ethyl acetate. The organic layer was dried with anhydrous sodium sulfate, filtered and concentrated to an oil. The oil was purified on flash silica gel column using 10-30% ethyl acetate in hexanes as eluent to yield 0.562 g (61%). MS (ESI) M+H = 432.5

Step 2: 3-Amino-1-(3-phenylamino-benzyl)-azepan-2-one, trifluoroacetic acid salt: In a 25mL round bottomed flask the ester from Step 1 above (0.025 g, 0.06 mmol) was dissolved in 10mL of 50%TFA / CH₂Cl₂ and was stirred at room temperature for 1 h. The solvent was concentrated to an oil and dried under high vacuum to yield 0.025 g (100%). MS (ESI) M+H = 310.4

Step 3: 2-Cyclopropylmethyl-3-hydroxy-heptanoic acid [2-oxo-1-(3-phenylamino-benzyl)-azepan-3-yl]-amide: In a 25mL round bottomed flask 2-Cyclopropylmethyl-3-hydroxy-heptanoic acid (0.0125g, 0.061mmol) was dissolved in 1mL DMF. To the reaction mixture HATU, O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate, (0.029 g, 0.0734 mmol) and N-Methyl morpholine (0.018 g, 0.018 mmol) were added and the reaction solution was

stirred at room temperature for 10 minutes. To the reaction mixture the compound from Step 2 above (0.025 g, 0.06 mmol) dissolved in 1mL of DMF was added and the reaction solution was stirred at room temperature for 18 h.

- 5 The solution was diluted with 50 mL of water and extracted twice with 20 mL of ethyl acetate. The combined organic layers were dried with anhydrous Sodium sulfate, filtered, and concentrated to an oil. The oil was purified on a flash silica gel column using 20-40% ethyl acetate in
10 hexanes as eluent to yield 6.0 mg (20%). MS (ESI) M+H = 492.6

Example 119. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-cyclopentyl-1-methyl-2,3-dihydro-1H-1,4-15 benzodiazepin-2-one. MS (ESI): 440 (M+H). Chromatography Note a.

Synthesis of 2-aminophenyl cyclopentylmethanone: To a solution of anthranilonitrile (15.0 g) in diethyl ether (600 mL) was added a solution of 2.0 M cyclopentylmagnesium bromide in diethyl ether (159 mL) at 0°C under nitrogen.
20 The mixture was stirred at room temperature overnight (20 hours). 500 ml of 5 N HCl in H₂O was added very slowly at 0°C. The mixture was stirred at room temperature for 1 hour. The aqueous layer was neutralized with 50% NaOH/H₂O
25 to pH = 12. 2 X 500 mL of ethyl acetate was used to extract the aqueous layer. The combined organic layers were dried over Na₂SO₄. The solvent was removed to give the crude product 22.5 g (93.6% yield). ¹H NMR(CDCl₃): δ 6.62-7.82 (m, 4H), 3.64-3.78 (m, 1H), 1.50-1.96 (m, 8H).

30 The 2-aminophenyl cyclopentylmethanone was converted to benzodiazepine following: R. G. Sherrill et al *J. Org. Chem.* 1995, 60, 734.

Example 120. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-benzyl-1-methyl-2,3-dihydro-1H-1,4-35 benzodiazepin-2-one. MS (ESI): 462 (M+H), 460 (M-H). Chromatography Note b and Note c.

The benzodiazepine was made from 1-(2-aminophenyl)-2-phenylethanone (see M. W. Partridge et al., *J. Chem. Soc.* 1964, 3673) following the synthetic sequence from: R. G. Sherrill, *J. Org. Chem.* 1995, 60, 734.

5

Example 121. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-benzyl-1-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 504 (M+H), 502 (M-H). Chromatography Note b and Note c.

10

Example 122. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-cycloheptyl-1-methyl -2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 468 (M+H), 466 (M-H). Chromatography Note b and Note c.

15

Example 123. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-cycloheptyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 544 (M+H), 542 (M-H). Chromatography Note a.

20

Example 124. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-butyl-5-cycloheptyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 510 (M+H), 508 (M-H). Chromatography Note b and Note c.

25

Example 125. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(2-pyridinylmethyl)-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 593 (M+H), 615 (M+Na), 591 (M-H).

30 Chromatography Note a.

Example 126. 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-pyridinylmethyl)-5-(2-fluorophenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 543 (M+H), 541 (M-H). Chromatography Note d and Note e.

Example 127. 3-(2-(S)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-(3-pyridinylmethyl)-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 565 (M+H), 563 (M-H). Chromatography Note f
5 and Note g.

Example 128. 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(N,N-dibutylamino)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 499 (M+H).
10 Chromatography Note a.

Example 129. 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-n-butyl-5-t-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 470 (M+H). Chromatography
15 Note b and Note c.

Example 130. 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(2-oxo-3,3-dimethylbutyl)-5-n-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 512 (M+H).
20 Chromatography Note b.

Example 131. 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-t-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 504 (M+H). Chromatography
25 Note a.

Example 132. 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(2-picoly1)-5-n-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 505 (M+H). Chromatography
30 Note b and Note c.

Example 133. 3-(2-(R)-Isobutyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-homopiperidino-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 471 (M+H).
35 Chromatography Note b and Note c.

Example 135. 3-(2-(R)-cyclopropylmethyl-1,3-dioxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one. MS (ESI): 514 (M+H), 536 (M+Na), 512 (M-H). Chromatography Note i.

5 Example 55 was oxidized to the dicarbonyl compound by TPAP/NMO, see S. V. Ley et al., *Synthesis* 1994, 639.

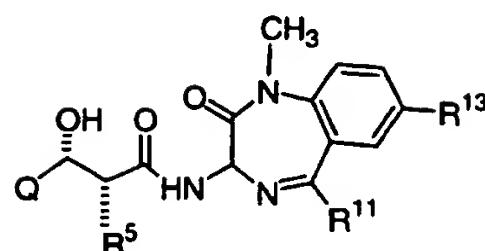
Example 136. 1-pentyrylcyclohexanecarboxylic acid (5-(4-fluorophenyl)-1-methyl-2-oxo-2,3-dihydro-1H-1,4-benzodiazepin-3-yl) amide. MS (ESI): 478 (M+H), 500 (M+Na), 476 (M-H). Chromatography Note h.

Chromatography Notes:

- Note a: epimeric mixture at BZD.
- 15 Note b: 1st eluting peak on CHIRALPAK AD chiral column with 10 - 35% i-PrOH/hexane.
- Note c: 2nd eluting peak on CHIRALPAK AD chiral column with 10 - 35% i-PrOH/hexane.
- 20 Note d: 1st eluting peak on CHIRALCEL OD chiral column with 2/200/800 ratio of MeOH/i-PrOH/Hexane.
- Note e: 2nd eluting peak on CHIRALCEL OD chiral column with 2/200/800 ratio of MeOH/i-PrOH/Hexane.
- Note f: 1st eluting peak on silica gel column with 2% MeOH/CH₂Cl₂.
- 25 Note g: 2nd eluting peak on silica gel column with 2% MeOH/CH₂Cl₂.
- Note k: made from BZD-amine which in Cbz protected form was the 2nd eluting peak on CHIRALPAK AD column with acetonitrile.
- 30 Note m: made from BZD-amine which in Cbz protected form was the 1st eluting peak on CHIRALPAK AS with methanol.
- Note n: made from BZD-amine which was the 1st eluting peak on CHIRALPAK AS with 0.1% diethylamine/methanol.
- 35 Note o: made from BZD-amine which was the 2nd eluting peak on CHIRALPAK AS with 0.1% diethylamine/methanol.
- Note h: made from BZD-amine which was the 1st eluting peak on CHIRALPAK AD column with 0.1% diethylamine/MeOH.
- 40 Note i: made from BZD-amine which in Cbz protected form was the 1st eluting peak on CHIRALPAK AD column with acetonitrile.
- Note l: made from BZD-amine which in Cbz protected was the 1st eluting peak on CHIRALCEL OJ with 1:4 of hexane/ethanol.
- 45 Note j: 1st eluting peak on CHIRALPAK AD column with acetonitrile/water.

- Note p: 2nd eluting peak on CHIRALPAK AD column with acetonitrile/water.
- Note q: 1st eluting peak on CHIRALCEL OD with 10% i-propanol/hexane.
- 5 Note r: 2nd eluting peak on CHIRALCEL OD with 10% i-propanol/hexane.
- Note s: made from bisbenazapine amine which was the 1st peak on CHIRALCEL OD with 20% i-PrOH/hexane with diethylamine.
- 10 Note t: made from BZD-amine which was the 2nd eluting peak on CHIRALPAK AD column with 0.1% diethylamine/MeOH.
- Note w: derived from Example 93 by treatment with TFA.
- Note x: derived from Example 88 by treatment with TFA.
- 15 Note u: 2nd eluting peak on silica gel column with 30-80% EtOAc/hexane.
- Note v: 1st eluting peak on silica gel column with 30-80% EtOAc/hexane.
- Note y: derived from Example 89 by treatment with TFA.
- 20 Note z: derived from Example 89 by treatment with TFA.
- Note aa: 1st eluting peak on CHIRALPAK AD with 20:80 of water/MeCN.
- Note bb: 2nd eluting peak on CHIRALPAK AD with 20:80 of water/MeCN.
- 25 Note cc: made from BZD-amine which in Cbz protected form was the 2nd eluting peak on CHIRALCEL OD column with 1/300/700 ratio of diethtlamine/EtOH/CO₂.
- Note dd: made from BZD-amine which in Cbz protected form was the 1st eluting peak on CHIRALCEL OD column with 1/300/700 ratio of diethtlamine/EtOH/CO₂.
- 30

Tables 1-8 below provide representative Examples of the compounds of Formula (I) of the present invention.

Table 1

5

Ex.#	Q	R ⁵	R ¹¹	R ¹³	Mass (M+H)
1	phenethyl	cyclopentylmethyl	phenyl	H	524
2	phenethyl	cyclopentylmethyl	4-F-phenyl	H	542
3	phenethyl	benzyl	phenyl	H	532
4	phenethyl	i-propyl	phenyl	H	484
5	3,5-diF- phenoxyethyl	cyclopentylmethyl	phenyl	H	562
6	3,5-diF- phenoxyethyl	i-butyl	phenyl	H	536
7	phenoxyethyl	cyclopentylmethyl	phenyl	Cl	560
8	phenoxyethyl	i-butyl	2-F-phenyl	Cl	552
9	cyclohexyl- oxymethyl	methyl	phenyl	H	464
10	cyclohexyl- oxymethyl	i-butyl	phenyl	H	506
11	phenoxyethyl	methyl	phenyl	Cl	492
12	phenoxyethyl	i-butyl	phenyl	Cl	534
13	cyclohexyl- oxymethyl	benzyl	phenyl	Cl	574
14	cyclohexyl- oxymethyl	cyclopentylmethyl	phenyl	Cl	566
15	cyclohexyl- oxymethyl	i-butyl	phenyl	Cl	540
16	cyclohexyl- oxymethyl	i-propyl	phenyl	Cl	526
17	4-CF ₃ -benzyl- oxymethyl	methoxy	phenyl	Cl	590
18	2,4-diF-benzyl- oxymethyl	methyl	phenyl	Cl	542
20	benzyloxymethyl	vinyl	phenyl	Cl	536
21	cyclohexyl- oxymethyl	methyl	phenyl	Cl	498
22					
23	phenethyl	i-butyl	phenyl	H	498
24	cyclopropyl	i-butyl	phenyl	H	434
25a	n-butyl	i-butyl	phenyl	H	450
25b	n-butyl	i-butyl	phenyl	H	450
25c	n-butyl	i-butyl	phenyl	H	450
26	n-hexyl	i-butyl	phenyl	H	478

27	n-propyl	i-butyl	phenyl	H	436
28	benzyl	i-butyl	phenyl	H	484
29	phenethyl	methyl	phenyl	H	442
30	phenpropyl	methyl	phenyl	H	470
31	methyl	i-butyl	phenyl	H	408
32	n-pentyl	i-butyl	phenyl	H	464
33	n-butyl	methyl	phenyl	H	408
34	phenyl	methyl	phenyl	H	428
35	2,2-dimethyl- propyl	methyl	phenyl	H	422
36	n-propyl	methyl	phenyl	H	394
37	4-propoxyphenyl	methyl	phenyl	H	486

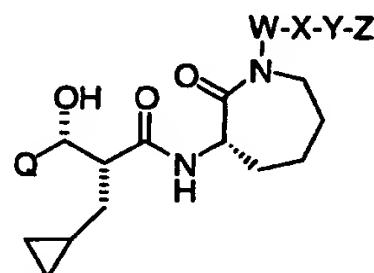
25a: the chiral carbon of the benzodiazepine ring is racemic.

25b: the chiral carbon of the benzodiazepine ring is (R).

25c: the chiral carbon of the benzodiazepine ring is (S).

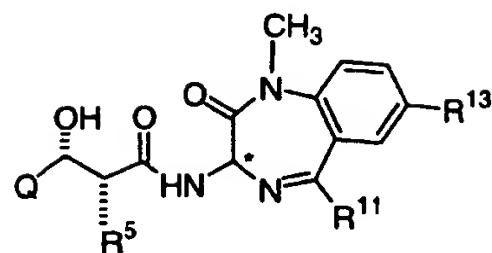
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Table 2



Ex.#	Q	Z-Y-X-W-
38	n-butyl	3-phenoxybenzyl
39	3,5-diF-phenethyl	3-phenoxybenzyl
40	cyclopentylmethyl	3-phenoxybenzyl
41	n-butyl	5-bromo-3-pyridinyl
118	n-butyl	3-(phenyl)amino-benzyl

10

Table 3

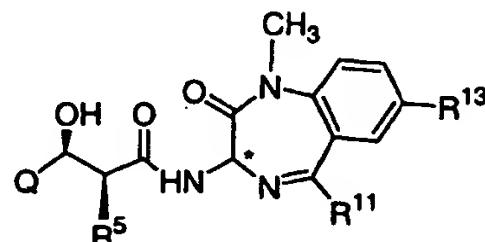
Ex.#	Q	R ⁵	R ¹¹	R ¹³
42	n-butyl	cyclopropylmethyl	2-F-phenyl	H
43	n-butyl	cyclopropylmethyl	azapan-1-yl	H
44	3,5-diF-phenethyl	cyclopropylmethyl	pyridin-2-yl	H
45	n-butyl	cyclopropylmethyl	4-Cl-phenyl	H
46	n-butyl	cyclopropylmethyl	3-F-phenyl	H
47	n-butyl	cyclopropylmethyl	4-MeO-phenyl	H
48	cyclopentyl methyl	cyclopropylmethyl	phenyl	H
49	but-3-enyl	cyclopropylmethyl	phenyl	H
50	but-3-enyl	cyclopropylmethyl	4-CF ₃ -phenyl	H
51	2-(3,5-dimethyl isoxazol-4-yl)-ethyl	cyclopropylmethyl	phenyl	H
52	n-butyl	cyclopropylmethyl	phenyl	Cl
53	n-butyl	cyclopropylmethyl	pyridin-2-yl	H
54	n-butyl	cyclopropylmethyl	4-F-phenyl	H
55	n-butyl	cyclopropylmethyl	4-CF ₃ -phenyl	H
56	2-cyclopentyl-ethyl	cyclopropylmethyl	pyridin-2-yl	H
57	n-butyl	i-butyl	4-CF ₃ -phenyl	H
58	2-(thiophen-2-yl)-ethyl	cyclopropylmethyl	phenyl	H
59	2-(furan-2-yl)-ethyl	cyclopropylmethyl	phenyl	H
60	2-cyclopentyl-ethyl	cyclopropylmethyl	4-F-phenyl	H
61	3,5-diF-phenethyl	cyclopropylmethyl	phenyl	H
62	n-butyl	cyclopropylmethyl	phenyl	H

63	n-butyl	thiophen-2-yl-methyl	phenyl	H
64	n-butyl	cyclopropylmethyl	phenyl	MeO
65	n-butyl	cyclobutylmethyl	phenyl	H
66	n-butyl	3,5-diF-phenyl-methyl	phenyl	H
67	n-butyl	furan-2-yl-methyl	phenyl	H
68	phenethyl	cyclopropylmethyl	4-F-phenyl	H
69	phenethyl	cyclopropylmethyl	pyridin-2-yl	H
70	n-butyl	i-butyl	4-F-phenyl	H
71	phenethyl	cyclopropylmethyl	phenyl	H
72	2-furan-2-yl-ethyl	cyclopropylmethyl	4-CF ₃ -phenyl	H
73	2-cyclopentyl-ethyl	cyclopropylmethyl	4-CF ₃ -phenyl	H
74	n-pentyl	cyclopropylmethyl	4-CF ₃ -phenyl	H
75	n-hexyl	cyclopropylmethyl	4-CF ₃ -phenyl	H
76	n-butyl	cyclopropylmethyl	4-CF ₃ -pyridin-2-yl	H
77	n-butyl	cyclobutylmethyl	4-CF ₃ -phenyl	H
78	n-butyl	cyclopentylmethyl	4-CF ₃ -phenyl	H
79	n-butyl	cyclopropylmethyl	4-methyl-pyridin-2-yl	H
80	n-butyl	cyclopropylmethyl	4-methyl-pyridin-2-yl	H
81	methyl	cyclopentylmethyl	4-CF ₃ -phenyl	H
82	n-butyl	but-3-enyl	phenyl	H
83	n-butyl	3-methyl-butyl	phenyl	H
84	n-butyl	ethyl	phenyl	H
85	n-butyl	propyl	phenyl	H
86	n-butyl	n-butyl	phenyl	H
87	1-(S)-amino-phenethyl	methyl	2-F-phenyl	Cl
88	1-(S)-(BOC-NH)-phenethyl	methyl	2-F-phenyl	Cl
89	N-BOC-pyrrolidin-2-(R)-yl	methyl	2-F-phenyl	Cl
90	pyrrolidin-2-(R)-yl	methyl	2-F-phenyl	Cl

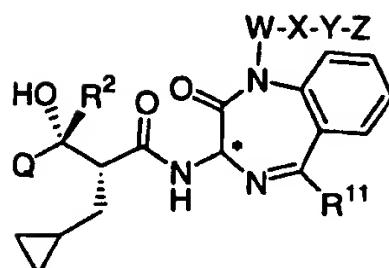
91	benzyloxy-methyl	i-propyl	phenyl	C1
119	n-butyl	cyclopropylmethyl	cyclopentyl	H
120	n-butyl	cyclopropylmethyl	benzyl	H
122	n-butyl	cyclopropylmethyl	cycloheptyl	H
128	n-butyl	cyclopropylmethyl	N,N-dibutyl-amino	H
133	n-butyl	i-butyl	homopiperidino	H
134	n-butyl	i-butyl	spiro-cyclo-pentyl	H

Table 4

5

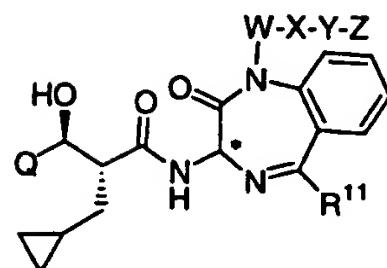


Ex.#	Q	R ⁵	R ¹¹	R ¹³
92	1-(S)-amino-phenethyl	Methyl	2-F-phenyl	C1
93	1-(S)-(BOC-NH)-phenethyl	Methyl	2-F-phenyl	C1
100	n-butyl	cyclopropylmethyl	4-CF ₃ -phenyl	H
101	n-butyl	cyclopropylmethyl	4-CF ₃ -phenyl	H

Table 5A

Ex.#	Q	R ²	Z-Y-X-W-	R ¹¹
94	n-butyl	H	methyl	thiazol-2-yl
95	n-butyl	H	cyclopropylmethyl	thiazol-2-yl
96	n-butyl	H	cyclopropylmethyl	4-CF ₃ -phenyl
97	n-butyl	H	benzyl	4-CF ₃ -phenyl
98	n-butyl	H	3-phenoxy-benzyl	4-CF ₃ -phenyl
99	n-butyl	H	3-pyridinyl-methyl	4-CF ₃ -phenyl
105	n-butyl	Me	methyl	4-CF ₃ -phenyl
106	n-butyl	H	3-phenoxy-benzyl	methyl
107	n-butyl	H	benzyl	methyl
121	n-butyl	H	n-butyl	benzyl
123	n-butyl	H	benzyl	cycloheptyl
124	n-butyl	H	n-butyl	cycloheptyl
125	n-butyl	H	2-pyridinyl-methyl	4-CF ₃ -phenyl
126	n-butyl	H	3-pyridinyl-methyl	2-F-phenyl
129	n-butyl	H	n-butyl	t-butyl
130	n-butyl	H	2-oxo-3,3-dimethylbutyl	n-butyl
131	n-butyl	H	benzyl	t-butyl
132	n-butyl	H	2-pyridinyl-methyl	n-butyl

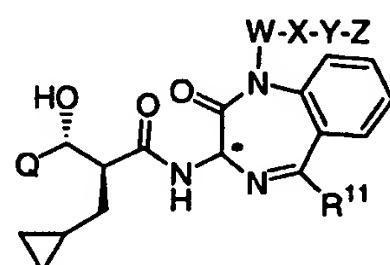
Table 5B



Ex. #	Q	R ²	Z-Y-X-W-	R ¹¹
102	n-butyl	H	methyl	4-CF ₃ -phenyl

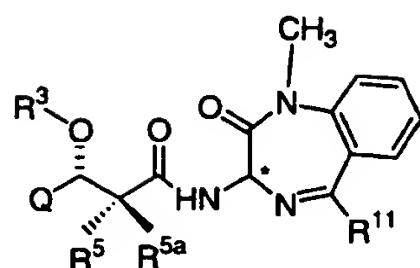
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Table 5c



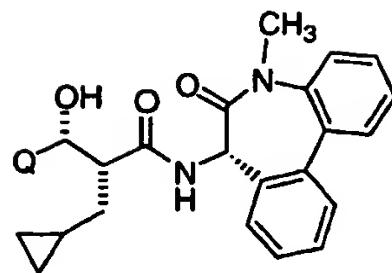
Ex.#	Q	R ²	Z-Y-X-W-	R ¹¹
103	n-butyl	H	methyl	4-CF ₃ -phenyl
104	n-butyl	H	methyl	4-CF ₃ -phenyl
127	ethyl	H	3-pyridinyl-methyl	4-CF ₃ -phenyl

10

Table 6

5

Ex.#	R ³	Q	R ⁵ /R ^{5a}	R ¹¹
108	acetyl	n-butyl	R ⁵ = i-butyl R ^{5a} = H	4-F-phenyl
109	methyl	2-cyclo pentyl ethyl	R ⁵ = cyclopropyl methyl R ^{5a} = H	phenyl
113	H	n-butyl	CR ⁵ R ^{5a} = 1,1-cyclohexyl	4-F-phenyl

Table 8

Ex. #	Q
114	n-butyl
115	n-pentyl
116	n-hexyl
117	2-(furan-2-yl)-ethyl

5

UTILITY

A β production has been implicated in the pathology of Alzheimer's Disease (AD). The compounds of the present invention have utility for the prevention and treatment of AD by inhibiting A β production. Methods of treatment target formation of A β production through the enzymes involved in the proteolytic processing of β amyloid precursor protein. Compounds that inhibit β or γ secretase activity, either directly or indirectly, control the production of A β . Such inhibition of β or γ secretases reduces production of A β , and is expected to reduce or prevent the neurological disorders associated with A β protein, such as Alzheimer's Disease.

Cellular screening methods for inhibitors of A β production, testing methods for the *in vivo* suppression of A β production, and assays for the detection of secretase activity are known in the art and have been disclosed in

numerous publications, including PCT publication number WO 98/22493, EPO publication number 0652009, US patent 5703129 and US patent 5593846; all hereby incorporated by reference.

5 The compounds of the present invention have utility for the prevention and treatment of disorders involving A β production, such as cerebrovascular disorders.

Compounds of the present invention have been shown to inhibit A β production, as determined by the secretase
10 inhibition assay described below.

Compounds of the present invention have been shown to inhibit A β production, utilizing the C-terminus β amyloid precursor protein accumulation assay described below.

Compounds of Formula (I) are expected to possess γ -secretase inhibitory activity. The γ -secretase inhibitory activity of the compounds of the present invention is demonstrated using assays for such activity, for example, using the assay described below. Compounds of the present invention have been shown to inhibit the activity of γ -secretase, as determined by the A β immunoprecipitation assay.
15
20

Compounds provided by this invention should also be useful as standards and reagents in determining the ability of a potential pharmaceutical to inhibit A β production.

25 These would be provided in commercial kits comprising a compound of this invention.

As used herein "ug" denotes microgram, "mg" denotes milligram, "g" denotes gram, " μ L" denotes microliter, "mL" denotes milliliter, "L" denotes liter, "nM" denotes
30 nanomolar, " μ M" denotes micromolar, "mM" denotes millimolar, "M" denotes molar, "nm" denotes nanometer, "SDS" denotes sodium dodecyl sulfate, and "DMSO" denotes dimethyl sulfoxide, and "EDTA" denotes ethylenediaminetetraacetato.

A compound is considered to be active if it has an IC₅₀ or K_i value of less than about 100 μM for the inhibition of Aβ production.

5 β amyloid precursor protein accumulation assay

A novel assay to evaluate the accumulation of Aβ protein was developed to detect potential inhibitors of secretase. The assay uses the N 9 cell line, characterized for expression of exogenous APP by immunoblotting and 10 immunoprecipitation.

The effect of test compounds on the accumulation of Aβ in the conditioned medium is tested by immunoprecipitation. Briefly, N 9 cells are grown to confluence in 6-well plates and washed twice with 1 x Hank's buffered salt solution.

15 The cells are starved in methionine/cysteine deficient media for 30 min, followed by replacement with fresh deficient media containing 150uCi S35 Translabel (Amersham). Test compounds dissolved in DMSO (final concentration 1%) are added together with the addition of 20 radiolabel. The cells are incubated for 4 h at 37°C in a tissue culture incubator.

At the end of the incubation period, the conditioned medium is harvested and pre-cleared by the addition of 5 μl normal mouse serum and 50ul of protein A Sepharose 25 (Pharmacia), mixed by end-over-end rotation for 30 minutes at 4°C, followed by a brief centrifugation in a microfuge. The supernatant is then harvested and transferred to fresh tubes containing 5ug of a monoclonal antibody (clone 1101.1; directed against an internal peptide sequence in 30 Aβ) and 50 μl protein A Sepharose. After incubation overnight at 4°C, the samples are washed three times with high salt washing buffer (50mM Tris, pH 7.5, 500mM NaCl, 5mM EDTA, 0.5% Nonidet P-40), three times with low salt wash buffer (50mM Tris, pH 7.5, 150mM NaCl, 5mM EDTA, 0.5% 35 Nonidet P-40), and three times with 10mM Tris, pH 7.5. The pellet after the last wash is resuspended in SDS sample

buffer (Laemmli, 1970) and boiled for 3 minutes. The supernatant is then fractionated on either 10-20% Tris/Tricine SDS gels or on 16.5% Tris/Tricine SDS gels. The gels are dried and exposed to X-ray film or analyzed by 5 phosphorimaging. The resulting image is analyzed for the presence of A β polypeptides. The steady-state level of A β in the presence of a test compound is compared to wells treated with DMSO (1%) alone. A typical test compound blocks A β accumulation in the conditioned medium, and is 10 therefore considered active, with an IC₅₀ less than 100 μ M.

C-Terminus β Amyloid Precursor Protein Accumulation Assay

The effect of test compounds on the accumulation of C-terminal fragments is determined by immunoprecipitation of 15 APP and fragments thereof from cell lysates. N 9 cells are metabolically labeled as above in the presence or absence of test compounds. At the end of the incubation period, the conditioned medium are harvested and cells lysed in RIPA buffer (10 mM Tris, pH 8.0 containing 1% Triton X-100, 20 1% deoxycholate, 0.1% SDS, 150mM NaCl, 0.125% NaN₃). Again, lysates are precleared with 5ul normal rabbit serum / 50ul protein A Sepharose, followed by the addition of BC-1 antiserum (15ul;) and 50ul protein A Sepharose for 16 hours at 4°C. The immunoprecipitates are washed as above, 25 bound proteins eluted by boiling in SDS sample buffer and fractionated by Tris/Tricine SDS-PAGE. After exposure to X-ray film or phosphorimager, the resulting images are analyzed for the presence of C-terminal APP fragments. The steady-state level of C-terminal APP fragments is compared 30 to wells treated with DMSO (1%) alone. A typical test compound stimulates C-terminal fragment accumulation in the cell lysates, and is therefore considered active, with an IC₅₀ less than 100 μ M.

35 A β Immunoprecipitation Assay

This immunoprecipitation assay is specific for γ secretase (i.e., proteolytic activity required to generate the C-terminal end of A β either by direct cleavage or generating a C-terminal extended species which is subsequently further proteolyzed). N 9 cells are pulse labeled in the presence of a reported γ secretase inhibitor (MDL 28170) for 1 h, followed by washing to remove radiolabel and MDL 28170. The media is replaced and test compounds are added. The cells are chased for increasing periods of times and A β is isolated from the conditioned medium and C-terminal fragments from cell lysates (see above). The test compounds are characterized whether a stabilization of C-terminal fragments is observed and whether A β is generated from these accumulated precursor. A typical test compound prevents the generation of A β out of accumulated C-terminal fragments and is considered active with an IC₅₀ less than 100 μ M.

Dosage and Formulation

The compounds of the present invention can be administered orally using any pharmaceutically acceptable dosage form known in the art for such administration. The active ingredient can be supplied in solid dosage forms such as dry powders, granules, tablets or capsules, or in liquid dosage forms, such as syrups or aqueous suspensions. The active ingredient can be administered alone, but is generally administered with a pharmaceutical carrier. A valuable treatise with respect to pharmaceutical dosage forms is Remington's Pharmaceutical Sciences, Mack Publishing.

The compounds of the present invention can be administered in such oral dosage forms as tablets, capsules (each of which includes sustained release or timed release formulations), pills, powders, granules, elixirs, tinctures, suspensions, syrups, and emulsions. Likewise, they may also be administered in intravenous (bolus or

infusion), intraperitoneal, subcutaneous, or intramuscular form, all using dosage forms well known to those of ordinary skill in the pharmaceutical arts. An effective but non-toxic amount of the compound desired can be
5 employed to prevent or treat neurological disorders related to β -amyloid production or accumulation, such as Alzheimer's disease and Down's Syndrome.

The compounds of this invention can be administered by any means that produces contact of the active agent with
10 the agent's site of action in the body of a host, such as a human or a mammal. They can be administered by any conventional means available for use in conjunction with pharmaceuticals, either as individual therapeutic agents or in a combination of therapeutic agents. They can be
15 administered alone, but generally administered with a pharmaceutical carrier selected on the basis of the chosen route of administration and standard pharmaceutical practice.

The dosage regimen for the compounds of the present
20 invention will, of course, vary depending upon known factors, such as the pharmacodynamic characteristics of the particular agent and its mode and route of administration; the species, age, sex, health, medical condition, and weight of the recipient; the nature and extent of the
25 symptoms; the kind of concurrent treatment; the frequency of treatment; the route of administration, the renal and hepatic function of the patient, and the effect desired. An ordinarily skilled physician or veterinarian can readily determine and prescribe the effective amount of the drug
30 required to prevent, counter, or arrest the progress of the condition.

Advantageously, compounds of the present invention may be administered in a single daily dose, or the total daily dosage may be administered in divided doses of two, three,
35 or four times daily.

The compounds for the present invention can be administered in intranasal form via topical use of suitable

intranasal vehicles, or via transdermal routes, using those forms of transdermal skin patches well known to those of ordinary skill in that art. To be administered in the form of a transdermal delivery system, the dosage administration 5 will, of course, be continuous rather than intermittent throughout the dosage regimen.

In the methods of the present invention, the compounds herein described in detail can form the active ingredient, and are typically administered in admixture with suitable 10 pharmaceutical diluents, excipients, or carriers (collectively referred to herein as carrier materials) suitably selected with respect to the intended form of administration, that is, oral tablets, capsules, elixirs, syrups and the like, and consistent with conventional 15 pharmaceutical practices.

For instance, for oral administration in the form of a tablet or capsule, the active drug component can be combined with an oral, non-toxic, pharmaceutically acceptable, inert carrier such as lactose, starch, sucrose, 20 glucose, methyl cellulose, magnesium stearate, dicalcium phosphate, calcium sulfate, mannitol, sorbitol and the like; for oral administration in liquid form, the oral drug components can be combined with any oral, non-toxic, pharmaceutically acceptable inert carrier such as ethanol, 25 glycerol, water, and the like. Moreover, when desired or necessary, suitable binders, lubricants, disintegrating agents, and coloring agents can also be incorporated into the mixture. Suitable binders include starch, gelatin, natural sugars such as glucose or β -lactose, corn 30 sweeteners, natural and synthetic gums such as acacia, tragacanth, or sodium alginate, carboxymethylcellulose, polyethylene glycol, waxes, and the like. Lubricants used in these dosage forms include sodium oleate, sodium stearate, magnesium stearate, sodium benzoate, sodium 35 acetate, sodium chloride, and the like. Disintegrators include, without limitation, starch, methyl cellulose, agar, bentonite, xanthan gum, and the like.

The compounds of the present invention can also be administered in the form of liposome delivery systems, such as small unilamellar vesicles, large unilamellar vesicles, and multilamellar vesicles. Liposomes can be formed from a 5 variety of phospholipids, such as cholesterol, stearylamine, or phosphatidylcholines.

Compounds of the present invention may also be coupled with soluble polymers as targetable drug carriers. Such polymers can include polyvinylpyrrolidone, pyran copolymer, 10 polyhydroxypropylmethacrylamide-phenol, polyhydroxyethylaspartamidephenol, or polyethyleneoxide-polylysine substituted with palmitoyl residues. Furthermore, the compounds of the present invention may be coupled to a class of biodegradable polymers useful in 15 achieving controlled release of a drug, for example, polylactic acid, polyglycolic acid, copolymers of polylactic and polyglycolic acid, polyepsilon caprolactone, polyhydroxy butyric acid, polyorthoesters, polyacetals, polydihydropyrans, polycyanoacylates, and crosslinked or 20 amphipathic block copolymers of hydrogels.

Gelatin capsules may contain the active ingredient and powdered carriers, such as lactose, starch, cellulose derivatives, magnesium stearate, stearic acid, and the like. Similar diluents can be used to make compressed 25 tablets. Both tablets and capsules can be manufactured as sustained release products to provide for continuous release of medication over a period of hours. Compressed tablets can be sugar coated or film coated to mask any unpleasant taste and protect the tablet from the 30 atmosphere, or enteric coated for selective disintegration in the gastrointestinal tract.

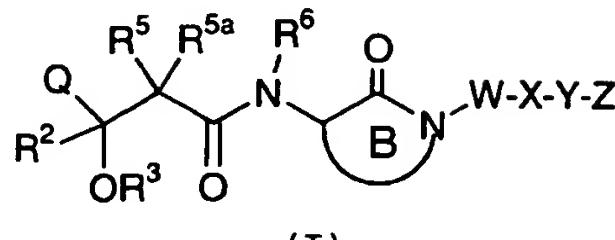
Liquid dosage forms for oral administration can contain coloring and flavoring to increase patient acceptance. In general, water, a suitable oil, saline, aqueous dextrose 35 (glucose), and related sugar solutions and glycols such as propylene glycol or polyethylene glycols are suitable carriers for parenteral solutions. Solutions for

- parenteral administration preferably contain a water soluble salt of the active ingredient, suitable stabilizing agents, and if necessary, buffer substances. Antioxidizing agents such as sodium bisulfite, sodium sulfite, or
- 5 ascorbic acid, either alone or combined, are suitable stabilizing agents. Also used are citric acid and its salts and sodium EDTA. In addition, parenteral solutions can contain preservatives, such as benzalkonium chloride, methyl- or propyl-paraben, and chlorobutanol.
- 10 Suitable pharmaceutical carriers are described in Remington's Pharmaceutical Sciences, Mack Publishing Company, a standard reference text in this field.

CLAIMS

What is claimed is:

5 1. A compound of the formula (I):



or a pharmaceutically acceptable salt form or prodrug

10 thereof, wherein:

Q is Q¹,

(C₁-C₃ alkyl)-O-Q¹,

(C₁-C₃ alkyl)-S-Q¹,

15 (C₁-C₃ alkyl)-S(=O)-Q¹,

(C₁-C₃ alkyl)-S(=O)₂-Q¹, or

(C₁-C₃ alkyl)-N(R²⁰)-Q¹;

Q¹ is C₁-C₈ alkyl substituted with 0-3 R^{1a};

20 C₂-C₈ alkenyl substituted with 0-3 R^{1a};

C₂-C₈ alkynyl substituted with 0-3 R^{1a};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or

25 5 to 10 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

30 R^{1a}, at each occurrence, is independently selected from H,

C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
10 haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and
(C₁-C₆ alkyl)-O-C(=O)-;

R² is H, methyl, ethyl, propyl, or butyl;

15 R³ is H, C₁-C₆ alkyl, -C(=O)(C₁-C₆ alkyl), -C(=S)(C₁-C₆
alkyl), or -C(=O)NR²¹R²²;

alternatively, R² and OR³ are combined to form C=O or
C=N-OH;

20 R⁵ is H, OR¹⁴;
C₁-C₆ alkyl substituted with 0-3 R^{5b};
C₁-C₆ alkoxy substituted with 0-3 R^{5b};
C₂-C₆ alkenyl substituted with 0-3 R^{5b};
25 C₂-C₆ alkynyl substituted with 0-3 R^{5b};
C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};
C₆-C₁₀ aryl substituted with 0-3 R^{5c}; or
30 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3R^{5c};

R^{5a} is H, C₁-C₄ alkyl, or C₂-C₄ alkenyl;

alternatively, R⁵ and R^{5a} may be combined to form a 3-7 membered cycloalkyl ring substituted with 0-3 R^{5c}; optionally the cycloalkyl ring formed by combining R⁵ and R^{5a} may be benzo fused, wherein the benzo fused 5 ring may be substituted with 0-3 R^{5c};

R^{5b}, at each occurrence, is independently selected from: H, C₁-C₆ alkyl, CF₃, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₂-C₆

10 alkenyl, C₂-C₆ alkynyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c}; C₃-C₁₀ carbocycle substituted with 0-3 R^{5c}; C₆-C₁₀ aryl substituted with 0-3 R^{5c}; and

15 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{5c};

20 R^{5c}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

25 R⁶ is H or C₁-C₆ alkyl;

W is -(CR⁸R^{8a})_p-;

p is 0, 1, 2, 3, or 4;

30 R⁸ and R^{8a}, at each occurrence, are independently selected from H, F, C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl and C₃-C₈ cycloalkyl;

35 X is a bond;

C₆-C₁₀ aryl substituted with 0-3 R^{Xb};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{Xb};

C₃-C₁₀ carbocycle substituted with 0-3 R^{Xb}; or
5 to 10 membered heterocycle substituted with 0-2 R^{Xb};

R^{Xb}, at each occurrence, is independently selected from H,
5 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

Y is a bond or -(CR⁹R^{9a})_t-V-(CR⁹R^{9a})_u-;

10 t is 0, 1, 2, or 3;

u is 0, 1, 2, or 3;

15 R⁹ and R^{9a}, at each occurrence, are independently selected
from H, F, C₁-C₆ alkyl or C₃-C₈ cycloalkyl;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-,
-N(R¹⁹)-, -C(=O)NR^{19b}-, -NR^{19b}C(=O)-, -NR^{19b}S(=O)₂-,
20 -S(=O)₂NR^{19b}-, -C(=O)O-, or -OC(=O)-;

Z is H;

C₁-C₈ alkyl substituted with 0-2 R¹²;

C₂-C₄ alkenyl substituted with 0-2 R¹²;

25 C₂-C₄ alkynyl substituted with 0-2 R¹²;
C₆-C₁₀ aryl substituted with 0-4 R^{12b};
C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
30 sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{12b};

Ring B is a 6, 7, or 8 membered lactam,
wherein the lactam is saturated, partially saturated
35 or unsaturated;

wherein each additional lactam carbon is substituted
with 0-2 R¹¹; and,
optionally, the lactam contains a heteroatom selected
from -N=, -NH-, -N(R¹⁰)-, -O-, -S-, -S(=O)-, and
5 -S(=O)₂-;

additionally, two R¹¹ substituents on adjacent atoms may be
combined to form C₃-C₆ carbocycle fused radical, a
benzo fused radical, or a 5 to 6 membered heteroaryl
10 fused radical,

15 wherein said 5 to 6 membered heteroaryl fused radical
comprises 1-2 heteroatoms selected from N, O, and S;
wherein said benzo fused radical or 5 to 6 membered
heteroaryl fused radical is substituted with 0-3 R¹³;

15 R¹⁰ is H, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹,
S(=O)₂R¹⁷;

20 C₁-C₆ alkyl substituted with 0-2 R^{10a};
C₆-C₁₀ aryl substituted with 0-4 R^{10b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{10b}; or
25 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is optionally substituted with 0-3
R^{10b};

30 R^{10a}, at each occurrence, is independently selected from H,
C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶,
CF₃;
aryl substituted with 0-4 R^{10b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{10b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered

heterocycle is optionally substituted with 0-3 R^{10b};

R^{10b}, at each occurrence, is independently selected from H,
5 OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

10 R¹¹, at each occurrence, is independently selected from H, C₁-C₄ alkoxy, Cl, F, Br, I, =O, CN, NO₂, NR¹⁸R¹⁹, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹, CF₃;

15 C₁-C₆ alkyl substituted with 0-1 R^{11a};
C₆-C₁₀ aryl substituted with 0-3 R^{11b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
20 heterocycle is substituted with 0-3 R^{11b};

R^{11a}, at each occurrence, is independently selected from H, C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, CF₃;

25 phenyl substituted with 0-3 R^{11b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
30 heterocycle is substituted with 0-3 R^{11b};

R^{11b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R¹² at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃,

acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄

5 alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or

5 to 10 membered heterocycle containing 1 to 4

10 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{12b};

R^{12b}, at each occurrence, is independently selected from H,

15 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R¹³, at each occurrence, is independently selected from H,

20 OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, and CF₃;

R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, C₁-C₆ alkyl, and C₂-C₆ alkoxyalkyl;

25 R^{14a} is H, phenyl, benzyl, or C₁-C₆ alkyl;

R¹⁵, at each occurrence, is independently selected from H,

C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-

30 C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

R¹⁶, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆



alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

5 alternatively, -NR¹⁵R¹⁶ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl;

10 R¹⁷ is H, C₁-C₆ alkyl, or C₂-C₆ alkoxyalkyl, aryl substituted by 0-4 R^{17a}, or aryl-CH₂- wherein said aryl is substituted by 0-4 R^{17a};

15 R^{17a} is H, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, butoxy, -OH, F, Cl, Br, I, CF₃, OCF₃, SCH₃, S(=O)CH₃, S(=O)₂CH₃, -NH₂, -N(CH₃)₂, or C₁-C₄ haloalkyl;

20 R¹⁸, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

25 alternatively, -NR¹⁷R¹⁸ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl;

30 R¹⁹, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

35 R^{19b}, at each occurrence, is independently selected from H and C₁-C₆ alkyl;

35 R²⁰ is H, OH, C₁-C₄ alkyl, phenyl, benzyl, or phenethyl;

R²¹, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, and phenethyl; and

R²², at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, and phenethyl.

2. A compound of Claim 1, or a pharmaceutically acceptable salt form or prodrug thereof, wherein:

10 Q is Q¹,

(C₁-C₃ alkyl)-O-Q¹,

(C₁-C₃ alkyl)-S-Q¹,

(C₁-C₃ alkyl)-S(=O)-Q¹,

(C₁-C₃ alkyl)-S(=O)₂-Q¹, or

15 (C₁-C₃ alkyl)-N(R²⁰)-Q¹;

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

C₂-C₆ alkenyl substituted with 0-3 R^{1a};

C₂-C₆ alkynyl substituted with 0-3 R^{1a};

20 C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or

25 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{1b};

R^{1a}, at each occurrence, is independently selected from H,
C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;

30 C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and

5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and

sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H,
5 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and (C₁-C₆ alkyl)-O-C(=O)-;

10 R² is H, methyl, ethyl, propyl, or butyl;

R³ is H, C₁-C₄ alkyl, -C(=O)(C₁-C₄ alkyl), -C(=S)(C₁-C₄ alkyl), or -C(=O)NR²¹R²²;

15 R⁵ is H, OR¹⁴;

C₁-C₆ alkyl substituted with 0-3 R^{5b};

C₁-C₆ alkoxy substituted with 0-3 R^{5b};

C₂-C₆ alkenyl substituted with 0-3 R^{5b};

C₂-C₆ alkynyl substituted with 0-3 R^{5b};

20 C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};

C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};

C₆-C₁₀ aryl substituted with 0-3 R^{5c}; or

5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and

25 sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{5c};

R^{5a} is H, C₁-C₄ alkyl, or C₂-C₄ alkenyl;

30 alternatively, R⁵ and R^{5a} may be combined to form a 3-7 membered cycloalkyl ring substituted with 0-3 R^{5c};

R^{5b}, at each occurrence, is independently selected from:

H, C₁-C₆ alkyl, CF₃, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂,

35 NR¹⁵R¹⁶, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₂-C₆

alkenyl, C₂-C₆ alkynyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-,

5 C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};
C₆-C₁₀ aryl substituted with 0-3 R^{5c}; and
10 5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
15 haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R⁶ is H, methyl, or ethyl;

W is -(CR⁸R^{8a})_p-;

20 p is 0, 1, or 2;

R⁸ and R^{8a}, at each occurrence, are independently selected
from H, F, methyl, and ethyl;

25 X is a bond;
phenyl substituted with 0-3 R^{Xb};
C₃-C₆ cycloalkyl substituted with 0-3 R^{Xb}; or
5 to 6 membered heterocycle substituted with 0-2 R^{Xb};

30 R^{Xb}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

35 Y is a bond or -(CR⁹R^{9a})_t-V-(CR⁹R^{9a})_u-;

t is 0, 1, or 2;

u is 0, 1, or 2;

5 R⁹ and R^{9a}, at each occurrence, are independently selected from H, F, methyl, and ethyl;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-,
-N(R¹⁹)-, -C(=O)NH-, -NHC(=O)-, -NHS(=O)₂-, or

10 -S(=O)₂NH-;

Z is H, halo;

C₁-C₄ alkyl substituted with 0-2 R¹²;

C₂-C₄ alkenyl substituted with 0-2 R¹²;

15 C₂-C₄ alkynyl substituted with 0-2 R¹²;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

20 5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};

Ring B is a 7 membered lactam,

wherein the lactam is saturated, partially saturated
25 or unsaturated;

wherein each additional lactam carbon is substituted
with 0-2 R¹¹; and,

optionally, the lactam contains a heteroatom selected
from -N=, -NH-, -N(R¹⁰)-, -O-, -S-, -S(=O)-, and
30 -S(=O)₂-;

35 additionally, two R¹¹ substituents on adjacent atoms may be
combined to form C₃-C₆ carbocycle fused radical, a
benzo fused radical, or a 5 to 6 membered heteroaryl
fused radical,

wherein said 5 to 6 membered heteroaryl fused radical comprises 1-2 heteroatoms selected from N, O, and S; wherein said benzo fused radical or 5 to 6 membered heteroaryl fused radical is substituted with 0-3 R¹³;

5

R¹⁰ is H, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹, S(=O)₂R¹⁷;

C₁-C₆ alkyl substituted with 0-2 R^{10a};

C₆-C₁₀ aryl substituted with 0-4 R^{10b};

10 C₃-C₁₀ carbocycle substituted with 0-3 R^{10b}; or
5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is optionally substituted with 0-3

15 R^{10b};

R^{10a}, at each occurrence, is independently selected from H, C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, CF₃, or aryl substituted with 0-4 R^{10b};

20

R^{10b}, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R¹¹, at each occurrence, is independently selected from H, C₁-C₄ alkoxy, Cl, F, Br, I, =O, CN, NO₂, NR¹⁸R¹⁹, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹,

30 CF₃;

C₁-C₆ alkyl substituted with 0-1 R^{11a};

C₆-C₁₀ aryl substituted with 0-3 R^{11b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or

35 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and

sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{11b};

R^{11a}, at each occurrence, is independently selected from H,

5 C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, CF₃;

phenyl substituted with 0-3 R^{11b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or

10 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{11b};

R^{11b}, at each occurrence, is independently selected from H,

15 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R¹² at each occurrence, is independently selected from H,

20 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

25 C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or

5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{12b};

30

R^{12b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

35

R¹³, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, and CF₃;

5 R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, C₁-C₆ alkyl, and C₂-C₆ alkoxyalkyl;

R¹⁵, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-10 C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

R¹⁶, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

alternatively, -NR¹⁵R¹⁶ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl;

25 R¹⁷ is H, aryl, aryl-CH₂-, C₁-C₆ alkyl, or C₂-C₆ alkoxyalkyl;

R¹⁸, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

30 R¹⁹, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

35 alternatively, -NR¹⁷R¹⁸ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl,

thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl;

R²⁰ is H, OH, C₁-C₄ alkyl, phenyl, benzyl, or phenethyl;

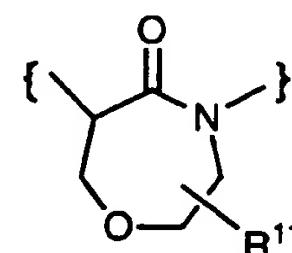
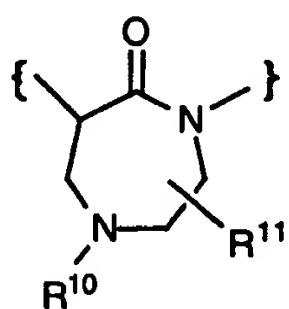
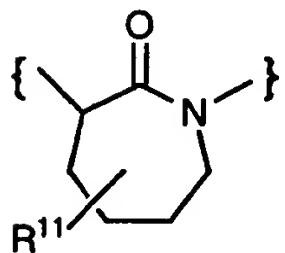
5

R²¹, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, and phenethyl; and

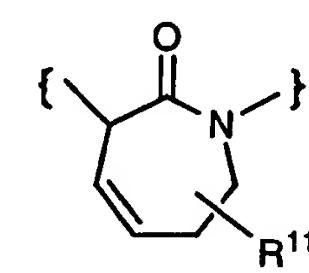
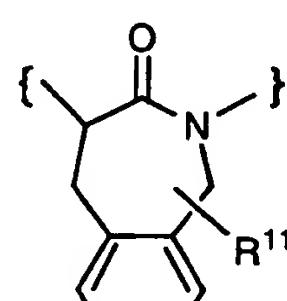
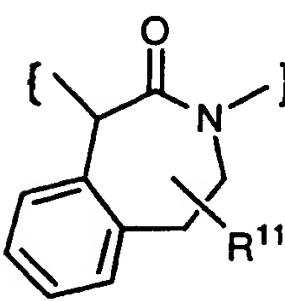
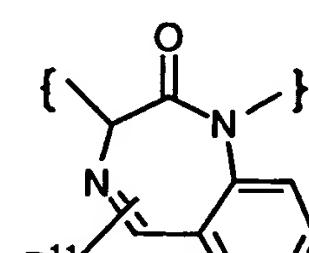
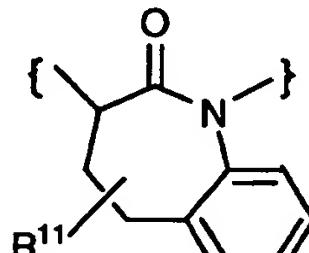
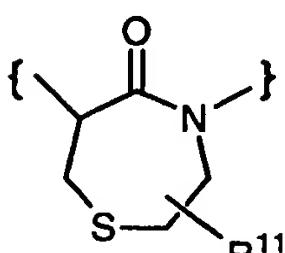
R²², at each occurrence, is independently selected from H,

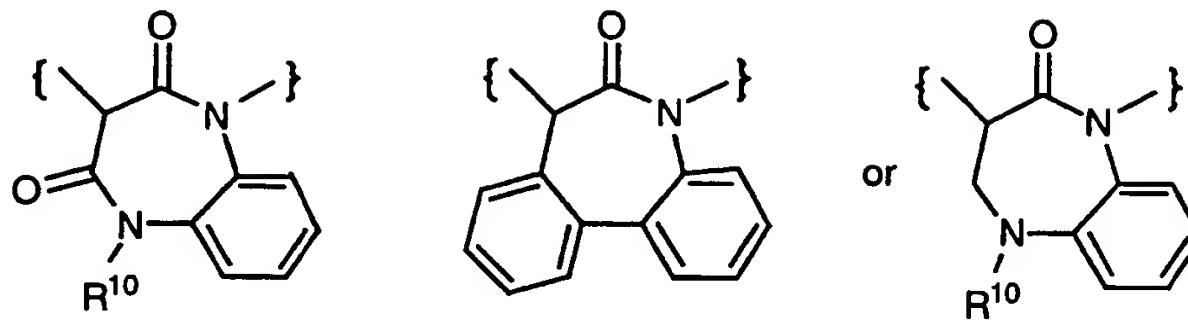
10 C₁-C₆ alkyl, phenyl, benzyl, and phenethyl.

3. A compound of Claim 2 wherein Ring B is selected from:



15

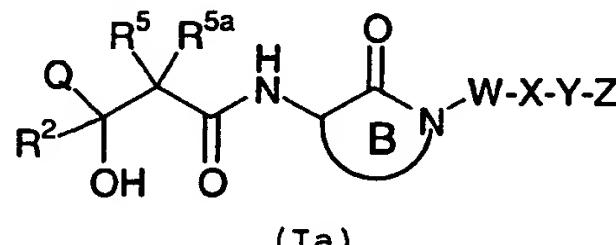




wherein each benzo fused radical is substituted with 0-3 R¹³.

5

4. A compound of Claim 2, of Formula (Ia):



or a pharmaceutically acceptable salt form or prodrug

10 thereof, wherein:

Q is Q¹,

(C₁-C₃ alkyl)-O-Q¹,

(C₁-C₃ alkyl)-S-Q¹,

15 (C₁-C₃ alkyl)-S(=O)-Q¹,

(C₁-C₃ alkyl)-S(=O)₂-Q¹, or

(C₁-C₃ alkyl)-N(R²⁰)-Q¹;

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

20 C₂-C₆ alkenyl substituted with 0-3 R^{1a};

C₂-C₆ alkynyl substituted with 0-3 R^{1a};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or

25 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

R^{1a}, at each occurrence, is independently selected from H,
C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;

- 5 C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};
C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{1b};

- 10 R^{1b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and
15 (C₁-C₆ alkyl)-O-C(=O)-;

R² is H, methyl, or ethyl;

R⁵ is H, OR¹⁴;

- 20 C₁-C₆ alkyl substituted with 0-3 R^{5b};
C₁-C₆ alkoxy substituted with 0-3 R^{5b};
C₂-C₆ alkenyl substituted with 0-3 R^{5b};
C₂-C₆ alkynyl substituted with 0-3 R^{5b};
C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};
25 C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};
C₆-C₁₀ aryl substituted with 0-3 R^{5c}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
30 heterocycle is substituted with 0-3R^{5c};

R^{5a} is H, C₁-C₄ alkyl, or C₂-C₄ alkenyl;

- alternatively, R⁵ and R^{5a} may be combined to form a 3-7
35 membered cycloalkyl ring substituted with 0-3 R^{5c};

R^{5b}, at each occurrence, is independently selected from:

H, C₁-C₆ alkyl, CF₃, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂,

NR¹⁵R¹⁶, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁-C₄ alkoxy, C₁-C₄

5 haloalkyl, C₁-C₄ haloalkoxy, and

C₁-C₄ haloalkyl-S-,

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};

C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};

C₆-C₁₀ aryl substituted with 0-3 R^{5c}; and

10 5 to 10 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{5c};

15 R^{5c}, at each occurrence, is independently selected from H,

OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,

S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄

haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

20 W is -(CR⁸R^{8a})_p-;

p is 0, 1, or 2;

R⁸ and R^{8a}, at each occurrence, are independently selected

25 from H, F, methyl, and ethyl;

X is a bond;

phenyl substituted with 0-3 RX^b;

C₃-C₆ cycloalkyl substituted with 0-3 RX^b; or

30 5 to 6 membered heterocycle containing 1 to 3

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-2 RX^b;

35 RX^b, at each occurrence, is independently selected from H,

OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,

$S(=O)CH_3$, $S(=O)_2CH_3$, C_1-C_6 alkyl, C_1-C_4 alkoxy, C_1-C_4 haloalkyl, C_1-C_4 haloalkoxy, and C_1-C_4 haloalkyl-S-;

Y is a bond or $-(CR^9R^{9a})_t-V-(CR^9R^{9a})_u-$;

5

t is 0, 1, or 2;

u is 0, 1, or 2;

10 R⁹ and R^{9a}, at each occurrence, are independently selected from H, F, methyl, and ethyl;

V is a bond, $-C(=O)-$, $-O-$, $-S-$, $-S(=O)-$, $-S(=O)_2-$,
 $-N(R^{19})-$, $-C(=O)NH-$, or $-NHC(=O)-$;

15

Z is H, halo;

C_1-C_4 alkyl substituted with 0-2 R¹²;

C_2-C_4 alkenyl substituted with 0-2 R¹²;

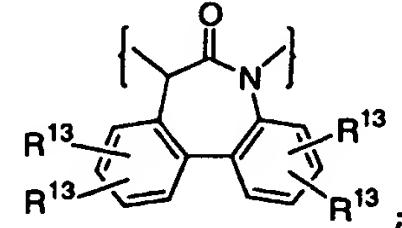
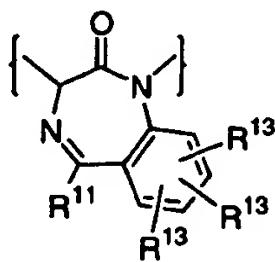
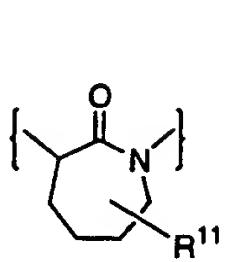
C_2-C_4 alkynyl substituted with 0-2 R¹²;

20 C_6-C_{10} aryl substituted with 0-4 R^{12b};

C_3-C_6 carbocycle substituted with 0-4 R^{12b}; or

5 to 6 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle
25 is substituted with 0-3 R^{12b};

Ring B is selected from:



30

R¹¹, at each occurrence, is independently selected from H,

C_1-C_4 alkoxy, Cl, F, Br, I, =O, CN, NO₂, NR¹⁸R¹⁹,
 $C(=O)R^{17}$, $C(=O)OR^{17}$, $C(=O)NR^{18}R^{19}$, $S(=O)_2NR^{18}R^{19}$,
 CF_3 ;

C₁-C₆ alkyl substituted with 0-1 R^{11a};

5 C₆-C₁₀ aryl substituted with 0-3 R^{11b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
10 heterocycle is substituted with 0-3 R^{11b};

R^{11a}, at each occurrence, is independently selected from H,
C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶,
 CF_3 ;

15 phenyl substituted with 0-3 R^{11b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{11b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
20 heterocycle is substituted with 0-3 R^{11b};

R^{11b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
25 haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R¹² at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃,
acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄
30 alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄
haloalkyl-S-;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or
5 to 10 membered heterocycle containing 1 to 4
35 heteroatoms selected from nitrogen, oxygen, and

sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{12b};

R^{12b}, at each occurrence, is independently selected from H,
5 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R¹³, at each occurrence, is independently selected from H,
10 OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, and CF₃;

R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, C₁-C₆ alkyl, and C₂-C₆ alkoxyalkyl;

15 R¹⁵, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

20 R¹⁶, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

25 alternatively, -NR¹⁵R¹⁶ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperazinyl;

30 R¹⁷ is H, aryl, aryl-CH₂-, C₁-C₆ alkyl, or C₂-C₆ alkoxyalkyl;

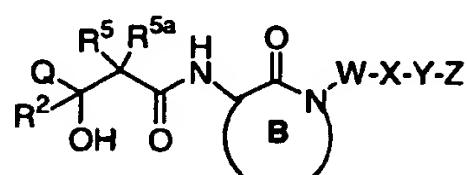
R^{18} , at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

5 R^{19} , at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

10 alternatively, -NR¹⁸R¹⁹ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperazinyl; and

15 R²⁰ is H, OH, C₁-C₄ alkyl, phenyl, benzyl, or phenethyl.

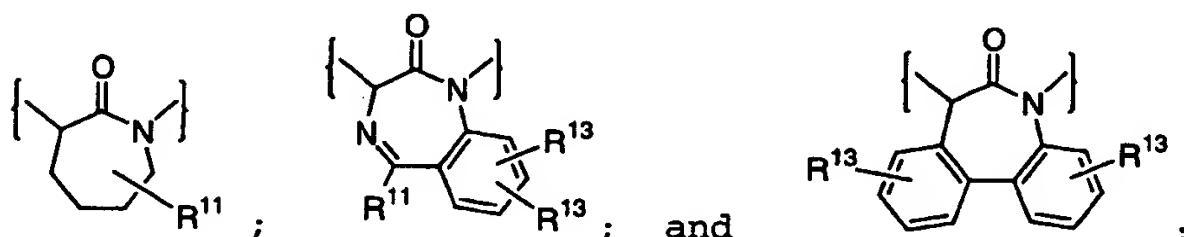
5. A compound, according to Claim 4, of Formula (Ia);



(Ia)

wherein:

Ring B is selected from:



25

Q is Q¹ or (C₁-C₃ alkyl)-O-Q¹;

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

C₂-C₆ alkenyl substituted with 0-3 R^{1a};

30 C₂-C₆ alkynyl substituted with 0-3 R^{1a};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};
C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};
C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or
5 to 10 membered heterocycle containing 1 to 4
5 heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{1b};

R^{1a}, at each occurrence, is independently selected from H,
10 C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;
C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};
C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and
5 to 10 membered heterocycle containing 1 to 4
15 heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 10 membered
heterocycle is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
20 S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and
(C₁-C₆ alkyl)-O-C(=O)-;

R² is H, methyl, or ethyl;

25 R⁵ is H, OR¹⁴;
C₁-C₆ alkyl substituted with 0-3 R^{5b};
C₂-C₆ alkenyl substituted with 0-3 R^{5b};
C₂-C₆ alkynyl substituted with 0-3 R^{5b};
30 C₃-C₆ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₆ carbocycle substituted with 0-3 R^{5c};
phenyl substituted with 0-3 R^{5c}; or
5 to 7 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and

sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{5c};

R^{5a} is H, C₁-C₄ alkyl, or C₂-C₄ alkenyl;

5

alternatively, R⁵ and R^{5a} may be combined to form a C₄-C₇ cycloalkyl ring;

R^{5b}, at each occurrence, is independently selected from:

10 H, C₁-C₆ alkyl, CF₃, OR¹⁴, Cl, F, Br, I, =O, CN, NO₂, NR¹⁵R¹⁶, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-,

15

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{5c};

C₃-C₁₀ carbocycle substituted with 0-3 R^{5c};

C₆-C₁₀ aryl substituted with 0-3 R^{5c}; and

5 to 10 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and

20

sulphur, wherein said 5 to 10 membered

heterocycle is substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,

25 S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

W is -(CR⁸R^{8a})_p-;

30 p is 0, 1, or 2;

R⁸ and R^{8a}, at each occurrence, are independently selected from H, methyl, and ethyl;

35 X is a bond;

phenyl substituted with 0-3 R^{Xb};

C₃-C₆ cyclolakyl substituted with 0-3 R^{Xb}; or

5 to 6 membered heterocycle containing 1 to 3 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-2 R^{Xb};

5

R^{Xb}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

10

Y is a bond or -(CR⁹R^{9a})_t-V-(CR⁹R^{9a})_u-;

t is 0, 1, or 2;

15 u is 0, 1, or 2;

R⁹ and R^{9a}, at each occurrence, are independently selected from H, F, methyl, and ethyl;

20 V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, -N(R¹⁹)-, -NHC(=O)-, or -C(=O)NH-;

Z is H, F, Cl, Br;

C₁-C₄ alkyl substituted with 0-2 R¹²;

25

C₂-C₄ alkenyl substituted with 0-2 R¹²;

C₂-C₄ alkynyl substituted with 0-2 R¹²;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

5 to 6 membered heterocycle containing 1 to 4

30

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-3 R^{12b};

R¹¹, at each occurrence, is independently selected from

H, =O, NR¹⁸R¹⁹, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹,
S(=O)₂NR¹⁸R¹⁹, CF₃;

C₁-C₆ alkyl substituted with 0-1 R^{11a};
phenyl substituted with 0-3 R^{11b};

5 C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or
5 to 7 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 7 membered heterocycle
is substituted with 0-3 R^{11b};

10 R^{11a}, at each occurrence, is independently selected from H,
C₁-C₄ alkyl, OR¹⁴, Cl, F, Br, =O, CN, NO₂, NR¹⁵R¹⁶,
CF₃;

phenyl substituted with 0-3 R^{11b};

15 C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or
5 to 7 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 7 membered heterocycle
is substituted with 0-3 R^{11b};

20 R^{11b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

25 R¹² at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃,
acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄
alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄
haloalkyl-S-;

30 C₆-C₁₀ aryl substituted with 0-4 R^{12b};
C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or
5 to 10 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and

sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{12b};

R^{12b}, at each occurrence, is independently selected from H,
5 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

R¹³, at each occurrence, is independently selected from H,
10 OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, and CF₃;

R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, C₁-C₆ alkyl, and C₂-C₆ alkoxyalkyl;

15 R¹⁵, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

20 R¹⁶, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)-, (C₁-C₆ alkyl)-O-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

25 alternatively, -NR¹⁵R¹⁶ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl; and

30 R¹⁷ is H, aryl, aryl-CH₂-, C₁-C₆ alkyl, or C₂-C₆ alkoxyalkyl;

R¹⁸, at each occurrence, is independently selected from H, C₁-C₆ alkyl, phenyl, benzyl, phenethyl, (C₁-C₆ alkyl)-C(=O)- and (C₁-C₆ alkyl)-S(=O)₂-;

5 alternatively, -NR¹⁸R¹⁹ may be a heterocyclic ring selected from the group piperidinyl, morpholinyl, thiomorpholinyl, pyrrolidinyl, homopiperidinyl, piperazinyl, and N-methylpiperizinyl; and

10 R¹⁹, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl.

6. A compound of Claim 5 wherein:

15

Q is Q¹;

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

C₂-C₆ alkenyl substituted with 0-3 R^{1a};

20

C₂-C₆ alkynyl substituted with 0-3 R^{1a};

C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or

5 to 10 membered heterocycle containing 1 to 4

25

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

R^{1a}, at each occurrence, is independently selected from H,

30

C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;

C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};

C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and

5 to 10 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and

sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H,
5 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and (C₁-C₆ alkyl)-O-C(=O)-;

10 R² is H, methyl, or ethyl;

R⁵ is H, OR¹⁴;

C₁-C₆ alkyl substituted with 0-3 R^{5b};
15 C₂-C₆ alkenyl substituted with 0-3 R^{5b}; or
C₂-C₆ alkynyl substituted with 0-3 R^{5b};

R^{5a} is H, methyl, ethyl, propyl, butyl, or C₂-C₄ alkenyl;

alternatively, R⁵ and R^{5a} may be combined to form a C₄-C₇
20 cycloalkyl ring;

R^{5b}, at each occurrence, is independently selected from:
H, methyl, ethyl, propyl, butyl, CF₃, OR¹⁴, Cl, F, Br,
I, =O, NR¹⁵R¹⁶,

25 C₃-C₇ cycloalkyl substituted with 0-3 R^{5c};
C₃-C₇ carbocycle substituted with 0-3 R^{5c};
phenyl substituted with 0-3 R^{5c}; and
30 5 to 7 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 7 membered heterocycle
is substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
35 S(=O)CH₃, S(=O)₂CH₃, C₁-C₄ alkyl, C₁-C₃ alkoxy, C₁-C₂
haloalkyl, and C₁-C₂ haloalkoxy;

W is $-(CHR^8)_p-$;

p is 0 or 1;

5 R⁸ is H, methyl, or ethyl;

X is a bond;

phenyl substituted with 0-2 R^{12b};

C₅-C₆ cycloalkyl substituted with 0-3 R^{12b}; or

10 5 to 6 membered heterocycle containing 1 to 3
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-2 R^{12b};

15 R^{12b}, at each occurrence, is independently selected from H,
OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄
haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

20 Y is a bond, -V-, -CH₂-V-, -V-CH₂-, or -CH₂-V-CH₂-;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, or
-N(R¹⁹)-;

25 Z is H, F, Cl, Br,

C₁-C₄ alkyl substituted with 0-2 R¹²;

C₂-C₄ alkenyl substituted with 0-2 R¹²;

C₂-C₄ alkynyl substituted with 0-2 R¹²;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

30 C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};

R¹¹, at each occurrence, is independently selected from H, =O, NR¹⁸R¹⁹, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹, CF₃;
C₁-C₆ alkyl substituted with 0-1 R^{11a};
5 phenyl substituted with 0-3 R^{11b};
C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or
5 to 7 membered heterocycle containing 1 to 4
10 heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 7 membered heterocycle
is substituted with 0-3 R^{11b}; wherein said 5 to 7
membered heterocycle is selected from pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl,
thiazolyl, pyrrolyl, piperazinyl, piperidinyl,
homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl,
15 isoxazolyl, and tetrazolyl;

R^{11a}, at each occurrence, is independently selected from H,
methyl, ethyl, propyl, butyl, methoxy, ethoxy,
propoxy, Cl, F, =O, NR¹⁵R¹⁶, CF₃;
20 phenyl substituted with 0-3 R^{11b};
C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or
5 to 7 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 7 membered heterocycle
25 is substituted with 0-3 R^{11b}; wherein said 5 to 7
membered heterocycle is selected from pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl,
thiazolyl, pyrrolyl, piperazinyl, piperidinyl,
homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl,
30 isoxazolyl, and tetrazolyl;

R^{11b}, at each occurrence, is independently selected from H,
OH, Cl, F, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃,
35 S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy,

ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

R¹² at each occurrence, is independently selected from H,

5 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

10 C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or
5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{12b};

15

R^{12b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

20

R¹³, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, and CF₃;

25 R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, C₁-C₄ alkyl, and C₂-C₄ alkoxyalkyl;

30 R¹⁵, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl;

35 R¹⁶, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl, phenethyl, CH₃CH₂C(=O)-, CH₃C(=O)-, CH₃CH₂OC(=O)-, CH₃OC(=O)-, CH₃CH₂S(=O)₂- and CH₃S(=O)₂-;

R¹⁷ is H, phenyl, benzyl, C₁-C₄ alkyl, or C₂-C₄ alkoxyalkyl;

R¹⁸, at each occurrence, is independently selected from H,

5 methyl, ethyl, propyl, butyl, phenyl, benzyl, and
phenethyl; and

R¹⁹, at each occurrence, is independently selected from H,
OH, methyl, ethyl, propyl, and butyl.

10

7. A compound of Claim 6 wherein:

Q is Q¹,

- 15 Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};
 C₂-C₆ alkenyl substituted with 0-3 R^{1a};
 C₂-C₆ alkynyl substituted with 0-3 R^{1a};
 C₃-C₆ cycloalkyl substituted with 0-3 R^{1b};
 phenyl substituted with 0-3 R^{1b}; or
20 5 to 6 membered heterocycle containing 1 to 4
 heteroatoms selected from nitrogen, oxygen, and
 sulphur, wherein said 5 to 6 membered heterocycle
 is substituted with 0-3 R^{1b};
- 25 R^{1a}, at each occurrence, is independently selected from
 H, methyl, ethyl, propyl, butyl, OR¹⁴, Cl, F, Br, I,
 NR¹⁵R¹⁶, CF₃;
 C₃-C₆ carbocycle substituted with 0-3 R^{1b};
 phenyl substituted with 0-3 R^{1b}; and
30 5 to 6 membered heterocycle containing 1 to 4
 heteroatoms selected from nitrogen, oxygen, and
 sulphur, wherein said 5 to 6 membered heterocycle
 is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, C₁-C₂ haloalkoxy, (methyl)OC(=O)-, (ethyl)OC(=O)-, (propyl)OC(=O)-, and (butyl)OC(=O)-;

5 R² is H or methyl;

10 R⁵ is H, OR¹⁴;

C₁-C₄ alkyl substituted with 0-1 R^{5b};
C₂-C₄ alkenyl substituted with 0-1 R^{5b}; or
C₂-C₄ alkynyl substituted with 0-1 R^{5b};

15 R^{5a} is H, methyl, ethyl, propyl, or butyl;

alternatively, R⁵ and R^{5a} may be combined to form a cyclobutyl, cyclopentyl, cyclohexyl, or cycloheptyl ring;

20

R^{5b}, at each occurrence, is independently selected from:

H, methyl, ethyl, propyl, butyl, CF₃, OR¹⁴, Cl, F, =O, NR¹⁵R¹⁶,

C₃-C₇ cycloalkyl substituted with 0-3 R^{5c};

25

C₃-C₇ carbocycle substituted with 0-3 R^{5c};

phenyl substituted with 0-3 R^{5c}; and

5 to 7 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle

30

is substituted with 0-3 R^{5c}; wherein said 5 to 7

membered heterocycle is selected from pyridinyl,

pyrimidinyl, triazinyl, furanyl, thienyl,

thiazolyl, pyrrolyl, piperazinyl, piperidinyl,

homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl,

35

isoxazolyl, and tetrazolyl;

R^{5c}, at each occurrence, is independently selected from H, OH, Cl, F, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂

5 haloalkoxy;

W is a bond, -CH₂-, or -CH(CH₃)-;

X is a bond;

10 phenyl substituted with 0-1 R^{Xb};
C₅-C₆ cycloalkyl substituted with 0-1 R^{Xb}; or
5 to 6 membered heterocycle containing 1 to 3
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
15 is substituted with 0-1 R^{Xb}; wherein said 5 to 6
membered heterocycle is selected from pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl,
thiazolyl, pyrrolyl, piperazinyl, piperidinyl,
pyrazolyl, imidazolyl, oxazolyl, and isoxazolyl;

20 R^{Xb}, at each occurrence, is independently selected from
H, OH, Cl, F, Br, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃,
S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy,
ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂
25 haloalkoxy;

Y is a bond, -V-, -V-CH₂-, or -CH₂V-;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, or

30 -N(R¹⁹)-;

Z is H, F, Cl, Br,

C₁-C₄ alkyl substituted with 0-2 R¹²;

C₂-C₄ alkenyl substituted with 0-2 R¹²;

35 C₂-C₄ alkynyl substituted with 0-2 R¹²;

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or
5 to 6 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};

5 R¹¹, at each occurrence, is independently selected from
H, NR¹⁸R¹⁹, CF₃;

10 C₁-C₄ alkyl substituted with 0-1 R^{11a};
phenyl substituted with 0-3 R^{11b};
C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or
5 to 7 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 7 membered heterocycle
is substituted with 0-3 R^{11b}; wherein said 5 to 7
membered heterocycle is selected from pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl,
thiazolyl, pyrrolyl, piperazinyl, piperidinyl,
homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl,
20 isoxazolyl, and tetrazolyl;

25 R^{11a}, at each occurrence, is independently selected from H,
methyl, ethyl, propyl, butyl, methoxy, ethoxy,
propoxy, Cl, F, =O, NR¹⁵R¹⁶, CF₃;

30 phenyl substituted with 0-3 R^{11b};
C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or
5 to 7 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 7 membered heterocycle
is substituted with 0-3 R^{11b}; wherein said 5 to 7
membered heterocycle is selected from pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl,
thiazolyl, pyrrolyl, piperazinyl, piperidinyl,
homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl,
35 isoxazolyl, and tetrazolyl;

R^{11b}, at each occurrence, is independently selected from H,
OH, Cl, F, NR¹⁵R¹⁶, CF₃, methyl, ethyl, propyl, butyl,
methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂
haloalkoxy;

R¹² at each occurrence, is independently selected from H,
OH, Cl, F, Br, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃, acetyl,
SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl,
butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and
C₁-C₂ haloalkoxy;
phenyl substituted with 0-4 R^{12b};
C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or
5 to 6 membered heterocycle containing 1 to 4
15 heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{12b};

R^{12b}, at each occurrence, is independently selected from
20 H, OH, Cl, F, Br, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃,
S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy,
ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂
haloalkoxy;

25 R¹³, at each occurrence, is independently selected from H,
OH, methyl, ethyl, propyl, butyl, methoxy, ethoxy,
propoxy, Cl, F, Br, CN, NR¹⁵R¹⁶, and CF₃;

30 R¹⁴, at each occurrence, is independently selected from H,
phenyl, benzyl, methyl, ethyl, propyl, and butyl;

R¹⁵, at each occurrence, is independently selected from H,
methyl, ethyl, propyl, or butyl;

R¹⁶, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl;

5 R¹⁸, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, phenyl, benzyl and, phenethyl; and

10 R¹⁹, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl and, phenethyl.

8. A compound of Claim 7 wherein:

15 Q is -CH₃, -CH₂CH₃, -CH₂CH₂CH₃, -CH₂CH₂CH₂CH₃,

-CH₂CH₂CH₂CH₂CH₃, -CH₂CH₂CH₂CH₂CH₂CH₃, -CH(CH₃)₂,

-CH(CH₃)CH₂CH₃, -CH₂CH(CH₃)₂, -CH₂C(CH₃)₃,

-CF₃, -CH₂CF₃, -CH₂CH₂CF₃, -CH₂CH₂CH₂CF₃,

20

-CH=CH₂, -CH₂CH=CH₂, -CH₂C(CH₃)=CH₂, -CH₂CH=C(CH₃)₂,

-CH₂CH₂CH=CH₂, -CH₂CH₂C(CH₃)=CH₂, -CH₂CH₂CH=C(CH₃)₂,

cis-CH₂CH=CH(CH₃), cis-CH₂CH₂CH=CH(CH₃),

trans-CH₂CH=CH(CH₃), trans-CH₂CH₂CH=CH(CH₃);

25

-C≡CH, -CH₂C≡CH, -CH₂C≡C(CH₃),

cyclopropyl-, cyclobutyl-, cyclopentyl-, cyclohexyl-,

cyclopropyl-CH₂-, cyclobutyl-CH₂-, cyclopentyl-CH₂-,

30 cyclohexyl-CH₂-, cyclopropyl-CH₂CH₂-, cyclobutyl-CH₂CH₂-,

cyclopentyl-CH₂CH₂-, cyclohexyl-CH₂CH₂-,

phenyl-, 2-F-phenyl-, 3-F-phenyl-, 4-F-phenyl-,

4-methoxyphenyl-, 4-ethoxyphenyl-, 4-propoxyphenyl-,

35 phenyl-CH₂-, (2-F-phenyl)CH₂-, (3-F-phenyl)CH₂-,

(4-F-phenyl)CH₂-, (2-Cl-phenyl)CH₂-, (3-Cl-phenyl)CH₂-,

(4-Cl-phenyl)CH₂-,

(2,3-diF-phenyl)CH₂- , (2,4-diF-phenyl)CH₂- ,
 (2,5-diF-phenyl)CH₂- , (2,6-diF-phenyl)CH₂- ,
 (3,4-diF-phenyl)CH₂- , (3,5-diF-phenyl)CH₂- ,
 5 (2,3-diCl-phenyl)CH₂- , (2,4-diCl-phenyl)CH₂- ,
 (2,5-diCl-phenyl)CH₂- , (2,6-diCl-phenyl)CH₂- ,
 (3,4-diCl-phenyl)CH₂- , (3,5-diCl-phenyl)CH₂- ,
 (3-F-4-Cl-phenyl)CH₂- , (3-F-5-Cl-phenyl)CH₂- ,
 (3-Cl-4-F-phenyl)CH₂- ,
 10 2-furanyl-CH₂- , 3-furanyl-CH₂- , 2-thienyl-CH₂- ,
 3-thienyl-CH₂- , 2-pyridyl-CH₂- , 3-pyridyl-CH₂- ,
 4-pyridyl-CH₂- , 1-imidazolyl-CH₂- , 2-oxazolyl-CH₂- ,
 4-oxazolyl-CH₂- , 5-oxazolyl-CH₂- , 3-isoxazolyl-CH₂- ,
 15 4-isoxazolyl-CH₂- , 5-isoxazolyl-CH₂- ,

 phenyl-CH₂CH₂- , (2-F-phenyl)CH₂CH₂- ,
 (3-F-phenyl)CH₂CH₂- , (4-F-phenyl)CH₂CH₂- ,
 (2-Cl-phenyl)CH₂CH₂- , (3-Cl-phenyl)CH₂CH₂- ,
 20 (4-Cl-phenyl)CH₂CH₂- ,
 (2,3-diF-phenyl)CH₂CH₂- , (2,4-diF-phenyl)CH₂CH₂- ,
 (2,5-diF-phenyl)CH₂CH₂- , (2,6-diF-phenyl)CH₂CH₂- ,
 (3,4-diF-phenyl)CH₂CH₂- , (3,5-diF-phenyl)CH₂CH₂- ,
 (2,3-diCl-phenyl)CH₂CH₂- , (2,4-diCl-phenyl)CH₂CH₂- ,
 25 (2,5-diCl-phenyl)CH₂CH₂- , (2,6-diCl-phenyl)CH₂CH₂- ,
 (3,4-diCl-phenyl)CH₂CH₂- , (3,5-diCl-phenyl)CH₂CH₂- ,
 (3-F-4-Cl-phenyl)CH₂CH₂- , (3-F-5-Cl-phenyl)CH₂CH₂- ;

 furanyl-CH₂CH₂- , thienyl-CH₂CH₂- , pyridyl-CH₂CH₂- ,
 30 1-imidazolyl-CH₂CH₂- , oxazolyl-CH₂CH₂- ,
 isoxazolyl-CH₂CH₂- , 3,5-dimethylisoxazol-4-yl-CH₂CH₂- ,
 phenyl-propyl- ;

 benzyl-CH(NH₂) - , benzyl-CH(NHC(=O)-O-tBu) - ,
 35 benzyloxy-CH₂- , pyrrolidin-2-yl- , or
 3-t-butoxycarbonylpyrrolidin-2-yl- ;

R² is H or methyl;

R⁵ is -CH₃, -CH₂CH₃, -CH₂CH₂CH₃, -CH(CH₃)₂, -CH₂CH₂CH₂CH₃,
 -CH(CH₃)CH₂CH₃, -CH₂CH(CH₃)₂, -CH₂C(CH₃)₃,
 -CH₂CH₂CH₂CH₂CH₃, -CH(CH₃)CH₂CH₂CH₃, -CH₂CH(CH₃)CH₂CH₃,
 5 -CH₂CH₂CH(CH₃)₂, -CH(CH₂CH₃)₂,

-CF₃, -CH₂CF₃, -CH₂CH₂CF₃, -CH₂CH₂CH₂CF₃, -CH₂CH₂CH₂CH₂CF₃,

-CH=CH₂, -CH₂CH=CH₂, -CH₂CH₂CH=CH₂, -CH=CHCH₃,

10 cis-CH₂CH=CH(CH₃), trans-CH₂CH=CH(CH₃),
 trans-CH₂CH=CH(C₆H₅), -CH₂CH=C(CH₃)₂, cis-CH₂CH=CHCH₂CH₃,
 trans-CH₂CH=CHCH₂CH₃, cis-CH₂CH₂CH=CH(CH₃), trans-
 CH₂CH₂CH=CH(CH₃), trans-CH₂CH=CHCH₂(C₆H₅),

15 -C≡CH, -CH₂C≡CH, -CH₂C≡C(CH₃), -CH₂C≡C(C₆H₅),
 -CH₂CH₂C≡CH, -CH₂CH₂C≡C(CH₃), -CH₂CH₂C≡C(C₆H₅),
 -CH₂CH₂CH₂C≡CH, -CH₂CH₂CH₂C≡C(CH₃), -CH₂CH₂CH₂C≡C(C₆H₅),

20 cyclopropyl-CH₂-, cyclobutyl-CH₂-, cyclopentyl-CH₂-,
 cyclohexyl-CH₂-, (2-CH₃-cyclopropyl)CH₂-,
 (3-CH₃-cyclobutyl)CH₂-, cyclopropyl-CH₂CH₂-,
 cyclobutyl-CH₂CH₂-, cyclopentyl-CH₂CH₂-,
 cyclohexyl-CH₂CH₂-, (2-CH₃-cyclopropyl)CH₂CH₂-,
 (3-CH₃-cyclobutyl)CH₂CH₂-,

25 phenyl-CH₂-, (2-F-phenyl)CH₂-, (3-F-phenyl)CH₂-,
 (4-F-phenyl)CH₂-, (3,5-diF-phenyl)CH₂-, 2-furanyl-CH₂-,
 3-furanyl-CH₂-, 2-thienyl-CH₂-, 3-thienyl-CH₂-,
 2-pyridyl-CH₂-, 3-pyridyl-CH₂-,
 30 4-pyridyl-CH₂-, 1-imidazolyl-CH₂-, 2-oxazolyl-CH₂-,
 4-oxazolyl-CH₂-, 5-oxazolyl-CH₂-, 3-isoxazolyl-CH₂-,
 4-isoxazolyl-CH₂-, 5-isoxazolyl-CH₂-,

35 phenyl-CH₂CH₂-, (2-F-phenyl)CH₂CH₂-, (3-F-phenyl)CH₂CH₂-,
 (4-F-phenyl)CH₂CH₂-, furanyl-CH₂CH₂-, thienyl-CH₂CH₂-,
 pyridyl-CH₂CH₂-, 1-imidazolyl-CH₂CH₂-, oxazolyl-CH₂CH₂-,
 isoxazolyl-CH₂CH₂-;

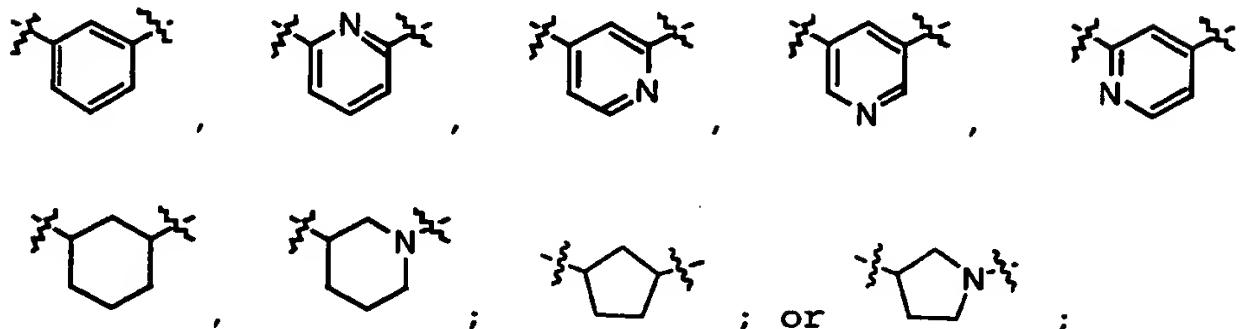
methoxy, ethoxy, propoxy, or butoxy;

R^{5a} is H;

5 alternatively, R⁵ and R^{5a} may be combined to form cyclopentyl, cyclohexyl, or cycloheptyl;

W is a bond, -CH₂-, or -CH(CH₃)-;

10 X is a bond;



15

Y is a bond, -CH₂-V-, -V-, or -V-CH₂-;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, -NH-, or -N(CH₃)-;

20

Z is H, F, Cl, Br, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, s-butyl, t-butyl,

cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl,

25

phenyl, 2-F-phenyl, 3-F-phenyl, 4-F-phenyl,

2-Cl-phenyl, 3-Cl-phenyl, 4-Cl-phenyl,

2,3-diF-phenyl, 2,4-diF-phenyl, 2,5-diF-phenyl,

2,6-diF-phenyl, 3,4-diF-phenyl, 3,5-diF-phenyl,

30 2,3-diCl-phenyl, 2,4-diCl-phenyl, 2,5-diCl-phenyl,

2,6-diCl-phenyl, 3,4-diCl-phenyl, 3,5-diCl-phenyl,

3-F-4-Cl-phenyl, 3-F-5-Cl-phenyl, 3-Cl-4-F-phenyl,

2-MeO-phenyl, 3-MeO-phenyl, 4-MeO-phenyl, 2-Me-phenyl,

3-Me-phenyl, 4-Me-phenyl, 2-MeS-phenyl, 3-MeS-phenyl,

35 4-MeS-phenyl, 2-CF₃O-phenyl, 3-CF₃O-phenyl.

4-CF₃O-phenyl,

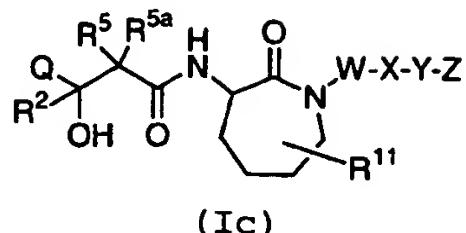
furanyl, thietyl, pyridyl, 2-Me-pyridyl, 3-Me-pyridyl,
 4-Me-pyridyl, 1-imidazolyl, oxazolyl, isoxazolyl,
 5 1-benzimidazolyl, morpholino, N-piperinyl,

phenyl-CH₂- , (2-F-phenyl)CH₂- , (3-F-phenyl)CH₂- ,
 (4-F-phenyl)CH₂- , (2-Cl-phenyl)CH₂- , (3-Cl-phenyl)CH₂- ,
 (4-Cl-phenyl)CH₂- , (2,3-diF-phenyl)CH₂- ,
 10 (2,4-diF-phenyl)CH₂- , (2,5-diF-phenyl)CH₂- ,
 (2,6-diF-phenyl)CH₂- , (3,4-diF-phenyl)CH₂- ,
 (3,5-diF-phenyl)CH₂- , (2,3-diCl-phenyl)CH₂- ,
 (2,4-diCl-phenyl)CH₂- , (2,5-diCl-phenyl)CH₂- ,
 (2,6-diCl-phenyl)CH₂- , (3,4-diCl-phenyl)CH₂- ,
 15 (3,5-diCl-phenyl)CH₂- , (3-F-4-Cl-phenyl)CH₂- ,
 (3-F-5-Cl-phenyl)CH₂- , (3-Cl-4-F-phenyl)CH₂- ,
 (2-MeO-phenyl)CH₂- , (3-MeO-phenyl)CH₂- ,
 (4-MeO-phenyl)CH₂- , (2-PhO-phenyl)CH₂- ,
 (3-PhO-phenyl)CH₂- , (4-PhO-phenyl)CH₂- ,
 20 (2-Me-phenyl)CH₂- , (3-Me-phenyl)CH₂- ,
 (4-Me-phenyl)CH₂- , (2-MeS-phenyl)CH₂- ,
 (3-MeS-phenyl)CH₂- , 4-MeS-phenyl)CH₂- ,
 (2-CF₃O-phenyl)CH₂- , (3-CF₃O-phenyl)CH₂- ,
 (4-CF₃O-phenyl)CH₂- , (furanyl)CH₂- , (thienyl)CH₂- ,
 25 (pyridyl)CH₂- , (2-Me-pyridyl)CH₂- , (3-Me-pyridyl)CH₂- ,
 (4-Me-pyridyl)CH₂- , (1-imidazolyl)CH₂- , (oxazolyl)CH₂- ,
 (isoxazolyl)CH₂- , (1-benzimidazolyl)CH₂- ,
 (cyclopropyl)CH₂- , (cyclobutyl)CH₂- , (cyclopentyl)CH₂- ,
 (cyclohexyl)CH₂- , (morpholino)CH₂- , (N-pipridinyl)CH₂- ,
 30 phenyl-CH₂CH₂- , (phenyl)₂CHCH₂- , (2-F-phenyl)CH₂CH₂- ,
 (3-F-phenyl)CH₂CH₂- , (4-F-phenyl)CH₂CH₂- ,
 (2-Cl-phenyl)CH₂CH₂- , (3-Cl-phenyl)CH₂CH₂- ,
 (4-Cl-phenyl)CH₂CH₂- , (2,3-diF-phenyl)CH₂CH₂- ,
 35 (2,4-diF-phenyl)CH₂CH₂- , (2,5-diF-phenyl)CH₂CH₂- ,
 (2,6-diF-phenyl)CH₂CH₂- , (3,4-diF-phenyl)CH₂CH₂- ,
 (3,5-diF-phenyl)CH₂CH₂- , (2,3-diCl-phenyl)CH₂CH₂- ,

- (2,4-diCl-phenyl)CH₂CH₂- , (2,5-diCl-phenyl)CH₂CH₂- ,
 (2,6-diCl-phenyl)CH₂CH₂- , (3,4-diCl-phenyl)CH₂CH₂- ,
 (3,5-diCl-phenyl)CH₂CH₂- , (3-F-4-Cl-phenyl)CH₂CH₂- ,
 (3-F-5-Cl-phenyl)CH₂CH₂- , (3-Cl-4-F-phenyl)CH₂CH₂- ,
- 5 (2-MeO-phenyl)CH₂CH₂- , (3-MeO-phenyl)CH₂CH₂- ,
 (4-MeO-phenyl)CH₂CH₂- , (2-Me-phenyl)CH₂CH₂- ,
 (3-Me-phenyl)CH₂CH₂- , (4-Me-phenyl)CH₂CH₂- ,
 (2-MeS-phenyl)CH₂CH₂- , (3-MeS-phenyl)CH₂CH₂- ,
 (4-MeS-phenyl)CH₂CH₂- , (2-CF₃O-phenyl)CH₂CH₂- ,
- 10 (3-CF₃O-phenyl)CH₂CH₂- , (4-CF₃O-phenyl)CH₂CH₂- ,
 (furanyl)CH₂CH₂- , (thienyl)CH₂CH₂- , (pyridyl)CH₂CH₂- ,
 (2-Me-pyridyl)CH₂CH₂- , (3-Me-pyridyl)CH₂CH₂- ,
 (4-Me-pyridyl)CH₂CH₂- , (imidazolyl)CH₂CH₂- ,
 (oxazolyl)CH₂CH₂- , (isoxazolyl)CH₂CH₂- ,
- 15 (benzimidazolyl)CH₂CH₂- , (cyclopropyl)CH₂CH₂- ,
 (cyclobutyl)CH₂CH₂- , (cyclopentyl)CH₂CH₂- ,
 (cyclohexyl)CH₂CH₂- , (morpholino)CH₂CH₂- , or
 (N-pipridinyl)CH₂CH₂- ;
- 20 R¹¹, at each occurrence, is independently selected from H,
 methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, s-
 butyl, t-butyl, phenyl, benzyl, phenethyl, cyclopropyl,
 cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl,
 cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl,
 25 cyclohexylmethyl, cycloheptylmethyl, cyclopropylethyl,
 cyclobutylethyl, cyclopentylethyl, cyclohexylethyl,
 2-F-phenyl-, 3-F-phenyl, 4-F-phenyl, 4-Cl-phenyl, 4-CH₃-
 phenyl, 4-MeO-phenyl-, 4-CF₃-phenyl, (4-F-phenyl)CH₂- ,
 (4-Cl-phenyl)CH₂- , (4-CH₃-phenyl)CH₂- ,
- 30 (4-CF₃-phenyl)CH₂- , (4-F-phenyl)CH₂CH₂- ,
 (4-Cl-phenyl)CH₂CH₂- , (4-CH₃-phenyl)CH₂CH₂- ,
 (4-CF₃-phenyl)CH₂CH₂- , pyridin-2-yl-, pyridin-3-yl-,
 4-CF₃-pyridin-2-yl-, 4-CH₃-pyridin-2-yl-, thiazol-2-yl-,
 azapan-1-yl, N,N-dimethylamino, N,N-diethylamino, N,N-
 35 dipropylamino, and N,N-dibutylamino; and
- R¹³, at each occurrence, is independently selected from H,
 MeO, F, and Cl.

9. A compound, according to one of Claims 5, 6, 7, or 8,
of Formula (Ic);

5

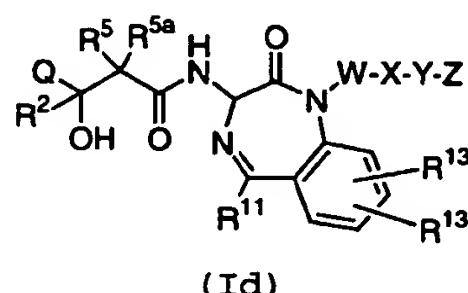


or a pharmaceutically acceptable salt form or prodrug
thereof.

10

10. A compound, according to one of Claims 5, 6, 7, or 8,
of Formula (Id);

15

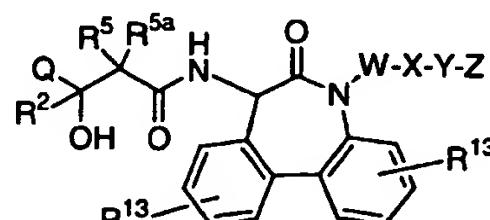


or a pharmaceutically acceptable salt form or prodrug
thereof.

20

11. A compound, according to one of Claims 5, 6, 7, or 8,
of Formula (Ie);

25



(Ie)

or a pharmaceutically acceptable salt form or prodrug
thereof.

12. A compound of selected from:

3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-

5 benzodiazepin-2-one;

3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-(4-fluoro-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10

3-(2(R)-Benzyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15

3-(2(R)-Isopropyl-3(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-4-(3,5-difluorophenoxy)butyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

20

3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-(3,5-difluorophenoxy)butyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

25

3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

30

3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-(4-fluorophenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-

cyclohexyloxybutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-

35 1,4-benzodiazepin-2-one;

- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-phenoxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(2(R)-Benzyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(2(R)-Cyclopentylmethyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 30 3-(2(R)-Isopropyl-3(S)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(2(R)-Methoxy-3(S)-hydroxyl-1-oxo-4-(4-trifluoromethylbenzyloxy)butyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-4-(2,4-difluorobenzyloxy)butyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(2(*R*)-Vinyl-3(*S*)-hydroxyl-1-oxo-4-benzyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 5 3-(2(*R*)-Methyl-3(*S*)-hydroxyl-1-oxo-4-cyclohexyloxybutyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 10 3-(2(*R*)-Isobutyl-3(*S*)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 15 3-(2(*R*)-Isobutyl-3(*S*)-hydroxyl-1-oxo-3-cyclopropylpropyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 20 3-(2(*R*)-Isobutyl-3(*S*)-hydroxyl-1-oxo-heptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 25 3-(*R*)-(2(*R*)-Isobutyl-3(*S*)-hydroxyl-1-oxo-heptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 30 3-(*S*)-(2(*R*)-Isobutyl-3(*S*)-hydroxyl-1-oxo-heptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 35 3-(2(*R*)-Isobutyl-3(*S*)-hydroxyl-1-oxo-nonyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 3-(2(*R*)-Isobutyl-3(*S*)-hydroxyl-1-oxo-hexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 3-(2(*R*)-Isobutyl-3(*S*)-hydroxyl-1-oxo-4-phenylbutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 3-(2(*R*)-Methyl-3(*S*)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;

- 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-6- phenylhexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-butyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 3-(2(R)-Isobutyl-3(S)-hydroxyl-1-oxo-octyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 10 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-heptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-3- phenylpropyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 15 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-5,5-dimethylhexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 20 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-hexyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 3-(2(R)-Methyl-3(S)-hydroxyl-1-oxo-3-(4-propoxyphenyl)propyl)amino-1-methyl-5-phenyl-2,3-dihydro-1*H*-1,4-benzodiazepin-2-one;
- 25 2-(R)-cyclopropylmethyl-3-(S)-hydroxylheptanoic acid (2-oxo-1-(3-phenoxybenzyl)azapan-3-(S)-yl) amide;
- 30 2(R)-cyclopropylmethyl-5-(3,5-difluorophenyl)-3-(S)-hydroxypentanoic acid (2-oxo-1-(3-phenoxybenzyl)azapan-3-(S)-yl) amide;
- 4-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxybutanoic acid (2-oxo-1-(3-phenoxybenzyl)azapan-3-(S)-yl) amide;
- 35

- 2 - (R) - cyclopropylmethyl-3 - (S) - hydroxyheptanioc acid (1 - (5 -
bromo-3-pyridinyl)methyl-2-oxo-azapan-3-(S)-yl) amide;
- 3 - (2 - (R) - cyclopropylmethyl-3 - (S) - hydroxyl-1 -
5 oxoheptyl)amino-5 - (2 - fluorophenyl) - 1 - methyl-2,3-dihydro-1H -
1,4-benzodiazepin-2-one;
- 3 - (2 - (R) - cyclopropylmethyl-3 - (S) - hydroxyl-1 -
10 oxoheptyl)amino-5 - (azapan-1-yl) - 1 - methyl-2,3-dihydro-1H -
1,4-benzodiazepin-2-one;
- 3 - (2 - (R) - cyclopropylmethyl-5 - (3,5-difluorophenyl) - 3 (S) -
hydroxyl-1-oxopentyl)amino-1-methyl-5 - (pyridn-2-yl) - 2,3 -
dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3 - (2 - (R) - cyclopropylmethyl-3 - (S) - hydroxyl-1 -
oxopentyl)amino-1-methyl-5 - (4-chlorophenyl) - 2,3-dihydro-1H -
1,4-benzodiazepin-2-one;
- 20 3 - (2 - (R) - cyclopropylmethyl-3 - (S) - hydroxyl-1 -
oxoheptyl)amino-5 - (4-methoxyphenyl)1-methyl-2,3-dihydro-1H -
1,4-benzodiazepin-2-one;
- 3 - (2 - (R) - cyclopropylmethyl-3 - (S) - hydroxyl-1 -
25 oxoheptyl)amino-5 - (4-methoxyphenyl) - 1 - methyl-2,3-dihydro -
1H-1,4-benzodiazepin-2-one;
- 3 - (S) - (4-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S) -
hydroxyl-1-oxobutyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H -
30 1,4-benzodiazepin-2-one;
- 3 - (S) - (2 - (R) - cyclopropylmethyl-3 - (S) - hydroxyl-1 - oxohept-6 -
enyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4 -
benzodiazepin-2-one;

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxohept-6-enyl)amino-1-methyl-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5 3-(S)-(2-(R)-cyclopropylmethyl-5-(3,5-dimethylisoxazol-4-yl)-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-(pyridin-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

20 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

25 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

30 3-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(pyridin-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

35 3-(2-(R)-iso-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(S)-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxo-5-(thiophen-2-yl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(S)-(2-(R)-cyclopropylmethyl-5-(furan-2-yl)3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(S)-(2-(R)-cyclopropylmethyl-5-(3,5-difluorophenyl)-3-(S)-hydroxy-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(S)-(3-(S)-hydroxyl-2-(R)-(thiophen-2-yl)methyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(S)-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-7-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 30 3-(S)-(2-(R)-cyclobutylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(S)-(2-(R)-(3,5-difluorobenzyl)-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(S)-(2-(R)-(furan-2-yl)methyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-(pyridin-2-yl)-2,3-dihydro-1H-benzodiazepin-2-one;
- 10 3-(2-(R)-iso-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(2-(R)-iso-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxo-5-phenylpentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(2-(R)-cyclopropylmethyl-5-(furan-2-yl)-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 30 3-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxooctyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethyl(pyridin-2-yl))-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5

3-(2-(R)-cyclobutylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4(trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10 3-(2-(R)-cyclopentylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-methyl-2-pyridyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

20 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-methyl-2-pyridyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

25 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxobutyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

30 3-(S)-(2-(R)-(3-butenyl)-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

35 3-(S)-(2-(R)-(3-methylbutyl)3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

40 3-(S)-(2-(R)-ethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

45 3-(S)-(2-(R)-propyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1,4-benzodiazepin-2-one;

3-(S)-(2-(R)-butyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5 3-(4-(S)-amino-3-(R)-hydroxyl-2-(R)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10 3-(4-(S)-(tert-butoxycarbonylamino-3-(R)-hydroxyl-2-(R)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15 3-(3-(tert-butoxycarbonylpyrrolidin-2-(R)-yl)-3-(R)-hydroxyl-2-(R)-methyl-1-oxopropyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

20 3-(3-(R)-hydroxyl-2-(R)-methyl-1-oxo-3-(pyrrolidin-2-(R)-yl)propyl)-amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

25 3-(4-benzyloxy-3-(R)-hydroxyl-2-(R)-iso-propyl-1-oxobutyl-amino-7-chloro-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

30 2-(4-(S)-amino-3-(S)-hydroxyl-2-(S)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

35 2-(4-(S)-(tert-butoxycarbonylamino-3-(S)hydroxyl-2-(S)-methyl-1-oxo-5-phenylpentyl)amino-7-chloro-5-(2-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(thiazol-2-yl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-cyclopropylmethyl-5-(thiazol-2-yl)-2,3-dihydro-1H-1,4benzodiazepin-2-one;

10

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-cyclopropylmethyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

20

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-phenoxybenzyl)-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

25

3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-pyridinylmethyl)-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

30

3-(2-(S)-cyclopropylmethyl-3-(R)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

35

- 3-(2-(S)-cyclopropylmethyl-3-(R)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(2-(R)-cyclopropylmethyl-3-(R)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(2-(S)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(2-(S)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-3-(S)-methyl-1-oxoheptyl)amino-1-methyl-5-(4-trifluoromethyl-phenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-phenoxybenzyl)-5-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 30 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(3-(S)-acetoxy-2-(R)-iso-butyl-1-oxoheptyl)amino-5-(4-fluorophenyl)-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(S)-(5-cyclopentyl-2-(R)-cyclopropylmethyl-3-(S)-methoxy-1-oxopentyl)amino-1-methyl-5-phenyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 1-(1-hydroxypentyl)cyclohexanecarboxylic acid(5-(4-fluorophenyl)-1-methyl-2-oxo-2,3-dihydro-1H-1,4-benzodiazepin-3-yl)amide;
- 10 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one;
- 15 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxooctyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one;
- 20 3-(2-(R)-cyclopropylmethyl-5-(furan-2-yl)-3-(S)-hydroxyl-1-oxopentyl)amino-5-methyl-5H,7H-dibenzo[b,d]azepin-6-one;
- 25 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-cyclopentyl-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 30 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-benzyl-1-methyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-benzyl-1-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

- 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-5-cycloheptyl-1-methyl -2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 5 3-(2-(R)-cycloropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-cycloheptyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 10 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-butyl-5-cycloheptyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 15 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(2-pyridinylmethyl)-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 20 3-(2-(R)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(3-pyridinylmethyl)-5-(2-fluorophenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 25 3-(2-(S)-cyclopropylmethyl-3-(S)-hydroxyl-1-oxopentyl)amino-1-(3-pyridinylmethyl)-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 30 3-(2-1(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-(N,N-dibutylamino)-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-n-butyl-5-t-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;
- 35 3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(2-oxo-3,3-dimethylbutyl)-5-n-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-benzyl-5-t-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

5

3-(2-(R)-Cyclopropylmethyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-(2-picollyl)-5-n-butyl-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

10 3-(2-(R)-Isobutyl-3-(S)-hydroxyl-1-oxoheptyl)amino-1-methyl-5-homopiperidino-2,3-dihydro-1H-1,4-benzodiazepin-2-one;

15 3-(2-(R)-cyclopropylmethyl-1,3-dioxoheptyl)amino-1-methyl-5-(4-trifluoromethylphenyl)-2,3-dihydro-1H-1,4-benzodiazepin-2-one; and

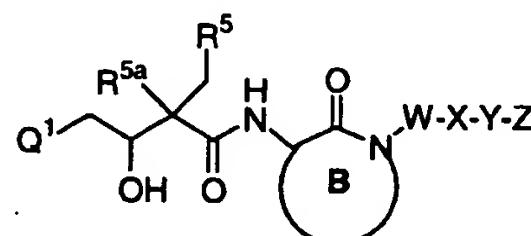
1-pentyrylcyclohexanecarboxylic acid (5-(4-fluorophenyl)-1-methyl-2-oxo-2,3-dihydro-1H-1,4-benzodiazepin-3-yl) amide.

20

13. A compound of Claim 12 wherein the stereochemistry of carbon 3 in lactam ring B is of the S configuration.

25 **14.** A compound of Claim 12 wherein the stereochemistry of carbon 3 in lactam ring B is of the R configuration.

15. A compound of Formula (Ib)

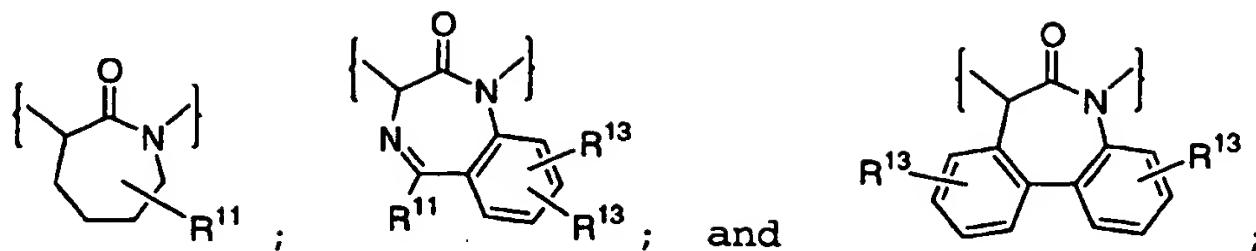


30

(Ib)

wherein:

Ring B is selected from:



- Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};
- 5 C₂-C₆ alkenyl substituted with 0-3 R^{1a};
- C₂-C₆ alkynyl substituted with 0-3 R^{1a};
- 10 C₃-C₁₀ cycloalkyl substituted with 0-3 R^{1b};
- C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};
- C₆-C₁₀ aryl substituted with 0-3 R^{1b}; or
- 15 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};
- R^{1a}, at each occurrence, is independently selected from H,
- 20 C₁-C₆ alkyl, OR¹⁴, Cl, F, Br, I, NR¹⁵R¹⁶, CF₃;
- C₃-C₁₀ carbocycle substituted with 0-3 R^{1b};
- C₆-C₁₀ aryl substituted with 0-3 R^{1b}; and
- 25 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{1b};
- R^{1b}, at each occurrence, is independently selected from H,
- OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
- 30 S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, C₁-C₄ haloalkyl-S-, and (C₁-C₆ alkyl)-O-C(=O)-;
- R⁵ is OR¹⁴;
- 35 C₁-C₆ alkyl substituted with 0-3 R^{5b};
- C₂-C₆ alkenyl substituted with 0-3 R^{5b}; or

C₂-C₆ alkynyl substituted with 0-3 R^{5b};

R^{5a} is H, methyl, ethyl, propyl, butyl, or C₂-C₄ alkenyl;

5 alternatively, R⁵ and R^{5a} may be combined to form a C₄-C₇ cycloalkyl ring;

R^{5b}, at each occurrence, is independently selected from:

H, methyl, ethyl, propyl, butyl, CF₃, OR¹⁴, Cl, F, Br,

10 I, =O, NR¹⁵R¹⁶,

C₃-C₇ cycloalkyl substituted with 0-3 R^{5c};

C₃-C₇ carbocycle substituted with 0-3 R^{5c};

phenyl substituted with 0-3 R^{5c}; and

5 to 7 membered heterocycle containing 1 to 4

15 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{5c};

R^{5c}, at each occurrence, is independently selected from H,
20 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₄ alkyl, C₁-C₃ alkoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

W is -(CHR⁸)_p-;

25

p is 0 or 1;

R⁸ is H, methyl, or ethyl;

30 X is a bond;

phenyl substituted with 0-2 R^{Xb};

C₅-C₆ cycloalkyl substituted with 0-3 R^{Xb}; or

35 5 to 6 membered heterocycle containing 1 to 3 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-2 R^{Xb};

R^{Xb}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

5

Y is a bond, -V-, -CH₂-V-, -V-CH₂-, or -CH₂-V-CH₂-;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, or -N(R¹⁹)-;

10

Z is H, F, Cl, Br,

C₁-C₄ alkyl substituted with 0-2 R¹²;

C₂-C₄ alkenyl substituted with 0-2 R¹²;

C₂-C₄ alkynyl substituted with 0-2 R¹²;

15

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

5 to 6 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle

20

is substituted with 0-3 R^{12b};

R¹¹, at each occurrence, is independently selected from H, =O, NR¹⁸R¹⁹, C(=O)R¹⁷, C(=O)OR¹⁷, C(=O)NR¹⁸R¹⁹, S(=O)₂NR¹⁸R¹⁹, CF₃;

25

C₁-C₆ alkyl substituted with 0-1 R^{11a};

phenyl substituted with 0-3 R^{11b};

C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and

30

sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl,

homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;

- 5 R^{11a}, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, Cl, F, =O, NR¹⁵R¹⁶, CF₃; phenyl substituted with 0-3 R^{11b}; C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or
10 5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thieryl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;
- 15
- 20 R^{11b}, at each occurrence, is independently selected from H, OH, Cl, F, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;
- 25
- 30 R¹² at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;
- 35 C₆-C₁₀ aryl substituted with 0-4 R^{12b}; C₃-C₁₀ carbocycle substituted with 0-4 R^{12b}; or 5 to 10 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 10 membered heterocycle is substituted with 0-3 R^{12b};

R^{12b}, at each occurrence, is independently selected from H, OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, C₁-C₆ alkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkyl, C₁-C₄ haloalkoxy, and C₁-C₄ haloalkyl-S-;

5 R¹³, at each occurrence, is independently selected from H, OH, C₁-C₆ alkyl, C₁-C₄ alkoxy, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, and CF₃;

10 R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, C₁-C₄ alkyl, and C₂-C₄ alkoxyalkyl;

15 R¹⁵, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl;

20 R¹⁶, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl, phenethyl, CH₃CH₂C(=O)-, CH₃C(=O)-, CH₃CH₂OC(=O)-, CH₃OC(=O)-, CH₃CH₂S(=O)₂- and CH₃S(=O)₂-;

R¹⁷ is H, phenyl, benzyl, C₁-C₄ alkyl, or C₂-C₄ alkoxyalkyl;

25 R¹⁸, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl; and

30 R¹⁹, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, and butyl.

16. A compound of Claim 15 wherein:

Q¹ is C₁-C₆ alkyl substituted with 0-3 R^{1a};

35 C₂-C₆ alkenyl substituted with 0-3 R^{1a};

C₂-C₆ alkynyl substituted with 0-3 R^{1a};
C₃-C₆ cycloalkyl substituted with 0-3 R^{1b};
phenyl substituted with 0-3 R^{1b}; or
5 to 6 membered heterocycle containing 1 to 4
5 heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{1b};

R^{1a}, at each occurrence, is independently selected from
10 H, methyl, ethyl, propyl, butyl, OR¹⁴, Cl, F, Br, I,
NR¹⁵R¹⁶, CF₃;

C₃-C₆ carbocycle substituted with 0-3 R^{1b};
phenyl substituted with 0-3 R^{1b}; and
5 to 6 membered heterocycle containing 1 to 4
15 heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-3 R^{1b};

R^{1b}, at each occurrence, is independently selected from H,
20 OH, Cl, F, Br, I, CN, NO₂, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃,
S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl,
methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, C₁-C₂
haloalkoxy, (methyl)OC(=O)-, (ethyl)OC(=O)-,
(propyl)OC(=O)-, and (butyl)OC(=O)-;

25 R⁵ is OR¹⁴;
C₁-C₄ alkyl substituted with 0-1 R^{5b};
C₂-C₄ alkenyl substituted with 0-1 R^{5b}; or
C₂-C₄ alkynyl substituted with 0-1 R^{5b};

30 R^{5a} is H, methyl, ethyl, propyl, or butyl;
alternatively, R⁵ and R^{5a} may be combined to form a
cyclobutyl, cyclopentyl, cyclohexyl, or cycloheptyl
35 ring;

R^{5b} , at each occurrence, is independently selected from:
H, methyl, ethyl, propyl, butyl, CF_3 , OR^{14} , Cl, F,
=O, $NR^{15}R^{16}$,
 C_3-C_7 cycloalkyl substituted with 0-3 R^{5c} ;
5 C_3-C_7 carbocycle substituted with 0-3 R^{5c} ;
phenyl substituted with 0-3 R^{5c} ; and
5 to 7 membered heterocycle containing 1 to 4
heteroatoms selected from nitrogen, oxygen, and
sulphur, wherein said 5 to 7 membered heterocycle
10 is substituted with 0-3 R^{5c} ; wherein said 5 to 7
membered heterocycle is selected from pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl,
thiazolyl, pyrrolyl, piperazinyl, piperidinyl,
homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl,
15 isoxazolyl, and tetrazolyl;

R^{5c} , at each occurrence, is independently selected from H,
OH, Cl, F, $NR^{15}R^{16}$, CF_3 , acetyl, SCH_3 , $S(=O)CH_3$,
 $S(=O)_2CH_3$, methyl, ethyl, propyl, butyl, methoxy,
20 ethoxy, propoxy, C_1-C_2 haloalkyl, and C_1-C_2
haloalkoxy;

W is a bond, $-CH_2-$, or $-CH(CH_3)-$;

25 X is a bond;
phenyl substituted with 0-1 R^{Xb} ;
 C_5-C_6 cycloalkyl substituted with 0-1 R^{Xb} ; or
5 to 6 membered heterocycle containing 1 to 3
heteroatoms selected from nitrogen, oxygen, and
30 sulphur, wherein said 5 to 6 membered heterocycle
is substituted with 0-1 R^{Xb} ; wherein said 5 to 6
membered heterocycle is selected from pyridinyl,
pyrimidinyl, triazinyl, furanyl, thienyl,
thiazolyl, pyrrolyl, piperazinyl, piperidinyl,
35 pyrazolyl, imidazolyl, oxazolyl, and isoxazolyl;

R^{Xb} , at each occurrence, is independently selected from

H, OH, Cl, F, Br, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

5

Y is a bond, -V-, -V-CH₂-, or -CH₂V-;

V is a bond, -C(=O)-, -O-, -S-, -S(=O)-, -S(=O)₂-, or
-N(R¹⁹)-;

10

Z is H, F, Cl, Br,

C₁-C₄ alkyl substituted with 0-2 R¹²;

C₂-C₄ alkenyl substituted with 0-2 R¹²;

C₂-C₄ alkynyl substituted with 0-2 R¹²;

15

C₆-C₁₀ aryl substituted with 0-4 R^{12b};

C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

5 to 6 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle

20

is substituted with 0-3 R^{12b};

R¹¹, at each occurrence, is independently selected from H, NR¹⁸R¹⁹, CF₃;

C₁-C₄ alkyl substituted with 0-1 R^{11a};

25

phenyl substituted with 0-3 R^{11b};

C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

5 to 7 membered heterocycle containing 1 to 4

heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle

30

is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thienyl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, isoxazolyl, and tetrazolyl;

35

R^{11a}, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, Cl, F, =O, NR¹⁵R¹⁶, CF₃;

5 phenyl substituted with 0-3 R^{11b};

C₃-C₆ carbocycle substituted with 0-3 R^{11b}; or

10 5 to 7 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 7 membered heterocycle is substituted with 0-3 R^{11b}; wherein said 5 to 7 membered heterocycle is selected from pyridinyl, pyrimidinyl, triazinyl, furanyl, thieryl, thiazolyl, pyrrolyl, piperazinyl, piperidinyl, homopiperidinyl, pyrazolyl, imidazolyl, oxazolyl, 15 isoxazolyl, and tetrazolyl;

R^{11b}, at each occurrence, is independently selected from H, OH, Cl, F, NR¹⁵R¹⁶, CF₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

20 R¹² at each occurrence, is independently selected from H, OH, Cl, F, Br, NR¹⁵R¹⁶, -C(=O)NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

25 phenyl substituted with 0-4 R^{12b};

C₃-C₆ carbocycle substituted with 0-4 R^{12b}; or

30 5 to 6 membered heterocycle containing 1 to 4 heteroatoms selected from nitrogen, oxygen, and sulphur, wherein said 5 to 6 membered heterocycle is substituted with 0-3 R^{12b};

35 R^{12b}, at each occurrence, is independently selected from

H, OH, Cl, F, Br, NR¹⁵R¹⁶, CF₃, acetyl, SCH₃, S(=O)CH₃, S(=O)₂CH₃, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, C₁-C₂ haloalkyl, and C₁-C₂ haloalkoxy;

5

R¹³, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, methoxy, ethoxy, propoxy, Cl, F, Br, CN, NR¹⁵R¹⁶, and CF₃;

10 R¹⁴, at each occurrence, is independently selected from H, phenyl, benzyl, methyl, ethyl, propyl, and butyl;

R¹⁵, at each occurrence, is independently selected from H, methyl, ethyl, propyl, or butyl;

15

R¹⁶, at each occurrence, is independently selected from H, OH, methyl, ethyl, propyl, butyl, phenyl, benzyl, and phenethyl;

20 R¹⁸, at each occurrence, is independently selected from H, methyl, ethyl, propyl, butyl, phenyl, benzyl and, phenethyl; and

R¹⁹, at each occurrence, is independently selected from H,
25 OH, methyl, ethyl, propyl, butyl, phenyl, benzyl and, phenethyl.

17. A compound of Claim 16 wherein:

30 Q¹ is -CH₃, -CH₂CH₃, -CH₂CH₂CH₃, -CH₂CH₂CH₂CH₃, -CH₂CH₂CH₂CH₂CH₃, -CH(CH₃)₂, -CH(CH₃)CH₂CH₃, -CH₂CH(CH₃)₂, -CH₂C(CH₃)₃,

35 -CF₃, -CH₂CF₃, -CH₂CH₂CF₃, -CH₂CH₂CH₂CF₃, -CH=CH₂, -CH₂CH=CH₂, -CH₂C(CH₃)=CH₂, -CH₂CH=C(CH₃)₂.

-CH₂CH₂CH=CH₂, -CH₂CH₂C(CH₃)=CH₂, -CH₂CH₂CH=C(CH₃)₂,
 cis-CH₂CH=CH(CH₃), cis-CH₂CH₂CH=CH(CH₃),
 trans-CH₂CH=CH(CH₃), trans-CH₂CH₂CH=CH(CH₃);

 5 -C≡CH, -CH₂C≡CH, -CH₂C≡C(CH₃),

 cyclopropyl-, cyclobutyl-, cyclopentyl-, cyclohexyl-,
 cyclopropyl-CH₂-, cyclobutyl-CH₂-, cyclopentyl-CH₂-,
 cyclohexyl-CH₂-, cyclopropyl-CH₂CH₂-, cyclobutyl-CH₂CH₂-,
 10 cyclopentyl-CH₂CH₂-, cyclohexyl-CH₂CH₂-,

 phenyl-, 2-F-phenyl-, 3-F-phenyl-, 4-F-phenyl-,
 4-methoxyphenyl-, 4-ethoxyphenyl-, 4-propoxypyhenyl-,
 phenyl-CH₂-, (2-F-phenyl)CH₂-, (3-F-phenyl)CH₂-,
 15 (4-F-phenyl)CH₂-, (2-Cl-phenyl)CH₂-, (3-Cl-phenyl)CH₂-,
 (4-Cl-phenyl)CH₂-,

 (2,3-diF-phenyl)CH₂-, (2,4-diF-phenyl)CH₂-,
 (2,5-diF-phenyl)CH₂-, (2,6-diF-phenyl)CH₂-,
 20 (3,4-diF-phenyl)CH₂-, (3,5-diF-phenyl)CH₂-,
 (2,3-diCl-phenyl)CH₂-, (2,4-diCl-phenyl)CH₂-,
 (2,5-diCl-phenyl)CH₂-, (2,6-diCl-phenyl)CH₂-,
 (3,4-diCl-phenyl)CH₂-, (3,5-diCl-phenyl)CH₂-,
 (3-F-4-Cl-phenyl)CH₂-, (3-F-5-Cl-phenyl)CH₂-,
 25 (3-Cl-4-F-phenyl)CH₂-,

 2-furanyl-CH₂-, 3-furanyl-CH₂-, 2-thienyl-CH₂-,
 3-thienyl-CH₂-, 2-pyridyl-CH₂-, 3-pyridyl-CH₂-,
 4-pyridyl-CH₂-, 1-imidazolyl-CH₂-, 2-oxazolyl-CH₂-,
 30 4-oxazolyl-CH₂-, 5-oxazolyl-CH₂-, 3-isoxazolyl-CH₂-,
 4-isoxazolyl-CH₂-, 5-isoxazolyl-CH₂-,

 phenyl-CH₂CH₂-, (2-F-phenyl)CH₂CH₂-,
 (3-F-phenyl)CH₂CH₂-, (4-F-phenyl)CH₂CH₂-,
 35 (2-Cl-phenyl)CH₂CH₂-, (3-Cl-phenyl)CH₂CH₂-,
 (4-Cl-phenyl)CH₂CH₂-,
 (2,3-diF-phenyl)CH₂CH₂-, (2,4-diF-phenyl)CH₂CH₂-,
 (2,5-diF-phenyl)CH₂CH₂-, (2,6-diF-phenyl)CH₂CH₂-,

(3,4-diF-phenyl)CH₂CH₂- , (3,5-diF-phenyl)CH₂CH₂- ,
 (2,3-diCl-phenyl)CH₂CH₂- , (2,4-diCl-phenyl)CH₂CH₂- ,
 (2,5-diCl-phenyl)CH₂CH₂- , (2,6-diCl-phenyl)CH₂CH₂- ,
 (3,4-diCl-phenyl)CH₂CH₂- , (3,5-diCl-phenyl)CH₂CH₂- ,
 5 (3-F-4-Cl-phenyl)CH₂CH₂- , (3-F-5-Cl-phenyl)CH₂CH₂- ;

 furanyl-CH₂CH₂- , thiienyl-CH₂CH₂- , pyridyl-CH₂CH₂- ,
 1-imidazolyl-CH₂CH₂- , oxazolyl-CH₂CH₂- ,
 isoxazolyl-CH₂CH₂- , 3,5-dimethylisoxazol-4-yl-CH₂CH₂- ,
 10 phenyl-propyl- ;

 benzyl-CH(NH₂)- , benzyl-CH(NHC(=O)-O-tBu)- ,
 benzyloxy-CH₂- , pyrrolidin-2-yl- , or
 3-t-butoxycarbonylpiperidin-2-yl- ;
 15 R⁵ is -CH₃ , -CH₂CH₃ , -CH₂CH₂CH₃ , -CH(CH₃)₂ , -CH₂CH₂CH₂CH₃ ,
 -CH(CH₃)CH₂CH₃ , -CH₂CH(CH₃)₂ , -CH₂C(CH₃)₃ ,
 -CH₂CH₂CH₂CH₂CH₃ , -CH(CH₃)CH₂CH₂CH₃ , -CH₂CH(CH₃)CH₂CH₃ ,
 -CH₂CH₂CH(CH₃)₂ , -CH(CH₂CH₃)₂ ,
 20 -CF₃ , -CH₂CF₃ , -CH₂CH₂CF₃ , -CH₂CH₂CH₂CF₃ , -CH₂CH₂CH₂CH₂CF₃ ,

 -CH=CH₂ , -CH₂CH=CH₂ , -CH₂CH₂CH=CH₂ , -CH=CHCH₃ ,
 cis-CH₂CH=CH(CH₃) , trans-CH₂CH=CH(CH₃) ,
 25 trans-CH₂CH=CH(C₆H₅) , -CH₂CH=C(CH₃)₂ , cis-CH₂CH=CHCH₂CH₃ ,
 trans-CH₂CH=CHCH₂CH₃ , cis-CH₂CH₂CH=CH(CH₃) , trans-
 CH₂CH₂CH=CH(CH₃) , trans-CH₂CH=CHCH₂(C₆H₅) ,

 -C≡CH , -CH₂C≡CH , -CH₂C≡C(CH₃) , -CH₂C≡C(C₆H₅) ,
 30 -CH₂CH₂C≡CH , -CH₂CH₂C≡C(CH₃) , -CH₂CH₂C≡C(C₆H₅) ,
 -CH₂CH₂CH₂C≡CH , -CH₂CH₂CH₂C≡C(CH₃) , -CH₂CH₂CH₂C≡C(C₆H₅) ,

 cyclopropyl-CH₂- , cyclobutyl-CH₂- , cyclopentyl-CH₂- ,
 cyclohexyl-CH₂- , (2-CH₃-cyclopropyl)CH₂- ,
 35 (3-CH₃-cyclobutyl)CH₂- , cyclopropyl-CH₂CH₂- ,
 cyclobutyl-CH₂CH₂- , cyclopentyl-CH₂CH₂- ,
 cyclohexyl-CH₂CH₂- , (2-CH₃-cyclopropyl)CH₂CH₂- ,
 (3-CH₃-cyclobutyl)CH₂CH₂- ,

phenyl-CH₂- , (2-F-phenyl)CH₂- , (3-F-phenyl)CH₂- ,
 (4-F-phenyl)CH₂- , (3,5-diF-phenyl)CH₂- , 2-furanyl-CH₂- ,
 3-furanyl-CH₂- , 2-thienyl-CH₂- , 3-thienyl-CH₂- ,
 5 2-pyridyl-CH₂- , 3-pyridyl-CH₂- ,
 4-pyridyl-CH₂- , 1-imidazolyl-CH₂- , 2-oxazolyl-CH₂- ,
 4-oxazolyl-CH₂- , 5-oxazolyl-CH₂- , 3-isoxazolyl-CH₂- ,
 4-isoxazolyl-CH₂- , 5-isoxazolyl-CH₂- ,

10 phenyl-CH₂CH₂- , (2-F-phenyl)CH₂CH₂- , (3-F-phenyl)CH₂CH₂- ,
 (4-F-phenyl)CH₂CH₂- , furanyl-CH₂CH₂- , thietyl-CH₂CH₂- ,
 pyridyl-CH₂CH₂- , 1-imidazolyl-CH₂CH₂- , oxazolyl-CH₂CH₂- ,
 isoxazolyl-CH₂CH₂- ;

15 methoxy, ethoxy, propoxy, or butoxy;

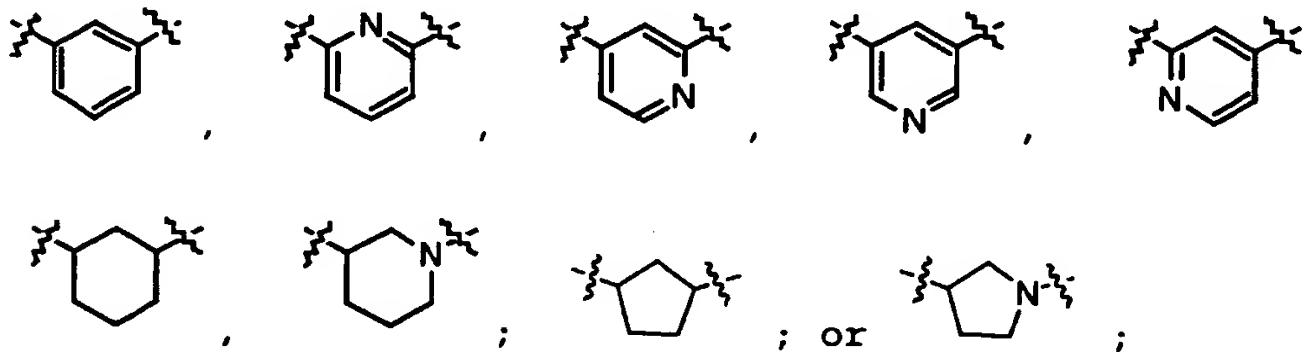
R^{5a} is H;

alternatively, R⁵ and R^{5a} may be combined to form
 20 cyclopentyl, cyclohexyl, or cycloheptyl;

W is a bond, -CH₂- , or -CH(CH₃)- ;

X is a bond;

25



30 Y is a bond, -CH₂-V- , -V- , or -V-CH₂- ;

V is a bond, -C(=O)- , -O- , -S- , -S(=O)- , -S(=O)₂- , -NH- , or
 -N(CH₃)- ;

Z is H, F, Cl, Br, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, s-butyl, t-butyl,

cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl,

5 phenyl, 2-F-phenyl, 3-F-phenyl, 4-F-phenyl,
 2-Cl-phenyl, 3-Cl-phenyl, 4-Cl-phenyl,
 2,3-diF-phenyl, 2,4-diF-phenyl, 2,5-diF-phenyl,
 2,6-diF-phenyl, 3,4-diF-phenyl, 3,5-diF-phenyl,
 10 2,3-diCl-phenyl, 2,4-diCl-phenyl, 2,5-diCl-phenyl,
 2,6-diCl-phenyl, 3,4-diCl-phenyl, 3,5-diCl-phenyl,
 3-F-4-Cl-phenyl, 3-F-5-Cl-phenyl, 3-Cl-4-F-phenyl,
 2-MeO-phenyl, 3-MeO-phenyl, 4-MeO-phenyl, 2-Me-phenyl,
 3-Me-phenyl, 4-Me-phenyl, 2-MeS-phenyl, 3-MeS-phenyl,
 15 4-MeS-phenyl, 2-CF₃O-phenyl, 3-CF₃O-phenyl,
 4-CF₃O-phenyl,

furanyl, thienyl, pyridyl, 2-Me-pyridyl, 3-Me-pyridyl,
 4-Me-pyridyl, 1-imidazolyl, oxazolyl, isoxazolyl,
 20 1-benzimidazolyl, morpholino, N-piperinyl,

phenyl-CH₂- , (2-F-phenyl)CH₂- , (3-F-phenyl)CH₂- ,
 (4-F-phenyl)CH₂- , (2-Cl-phenyl)CH₂- , (3-Cl-phenyl)CH₂- ,
 (4-Cl-phenyl)CH₂- , (2,3-diF-phenyl)CH₂- ,
 25 (2,4-diF-phenyl)CH₂- , (2,5-diF-phenyl)CH₂- ,
 (2,6-diF-phenyl)CH₂- , (3,4-diF-phenyl)CH₂- ,
 (3,5-diF-phenyl)CH₂- , (2,3-diCl-phenyl)CH₂- ,
 (2,4-diCl-phenyl)CH₂- , (2,5-diCl-phenyl)CH₂- ,
 (2,6-diCl-phenyl)CH₂- , (3,4-diCl-phenyl)CH₂- ,
 30 (3,5-diCl-phenyl)CH₂- , (3-F-4-Cl-phenyl)CH₂- ,
 (3-F-5-Cl-phenyl)CH₂- , (3-Cl-4-F-phenyl)CH₂- ,
 (2-MeO-phenyl)CH₂- , (3-MeO-phenyl)CH₂- ,
 (4-MeO-phenyl)CH₂- , (2-PhO-phenyl)CH₂- ,
 (3-PhO-phenyl)CH₂- , (4-PhO-phenyl)CH₂- ,
 35 (2-Me-phenyl)CH₂- , (3-Me-phenyl)CH₂- ,
 (4-Me-phenyl)CH₂- , (2-MeS-phenyl)CH₂- ,
 (3-MeS-phenyl)CH₂- , (4-MeS-phenyl)CH₂- ,
 (2-CF₃O-phenyl)CH₂- , (3-CF₃O-phenyl)CH₂- ,

(4-CF₃O-phenyl)CH₂- , (furanyl)CH₂- , (thienyl)CH₂- ,
 (pyridyl)CH₂- , (2-Me-pyridyl)CH₂- , (3-Me-pyridyl)CH₂- ,
 (4-Me-pyridyl)CH₂- , (1-imidazolyl)CH₂- , (oxazolyl)CH₂- ,
 (isoxazolyl)CH₂- , (1-benzimidazolyl)CH₂- ,
 5 (cyclopropyl)CH₂- , (cyclobutyl)CH₂- , (cyclopentyl)CH₂- ,
 (cyclohexyl)CH₂- , (morpholino)CH₂- , (N-pipridinyl)CH₂- ,

 phenyl-CH₂CH₂- , (phenyl)₂CHCH₂- , (2-F-phenyl)CH₂CH₂- ,
 (3-F-phenyl)CH₂CH₂- , (4-F-phenyl)CH₂CH₂- ,
 10 (2-Cl-phenyl)CH₂CH₂- , (3-Cl-phenyl)CH₂CH₂- ,
 (4-Cl-phenyl)CH₂CH₂- , (2,3-diF-phenyl)CH₂CH₂- ,
 (2,4-diF-phenyl)CH₂CH₂- , (2,5-diF-phenyl)CH₂CH₂- ,
 (2,6-diF-phenyl)CH₂CH₂- , (3,4-diF-phenyl)CH₂CH₂- ,
 (3,5-diF-phenyl)CH₂CH₂- , (2,3-diCl-phenyl)CH₂CH₂- ,
 15 (2,4-diCl-phenyl)CH₂CH₂- , (2,5-diCl-phenyl)CH₂CH₂- ,
 (2,6-diCl-phenyl)CH₂CH₂- , (3,4-diCl-phenyl)CH₂CH₂- ,
 (3,5-diCl-phenyl)CH₂CH₂- , (3-F-4-Cl-phenyl)CH₂CH₂- ,
 (3-F-5-Cl-phenyl)CH₂CH₂- , (3-Cl-4-F-phenyl)CH₂CH₂- ,
 (2-MeO-phenyl)CH₂CH₂- , (3-MeO-phenyl)CH₂CH₂- ,
 20 (4-MeO-phenyl)CH₂CH₂- , (2-Me-phenyl)CH₂CH₂- ,
 (3-Me-phenyl)CH₂CH₂- , (4-Me-phenyl)CH₂CH₂- ,
 (2-MeS-phenyl)CH₂CH₂- , (3-MeS-phenyl)CH₂CH₂- ,
 (4-MeS-phenyl)CH₂CH₂- , (2-CF₃O-phenyl)CH₂CH₂- ,
 (3-CF₃O-phenyl)CH₂CH₂- , (4-CF₃O-phenyl)CH₂CH₂- ,
 25 (furanyl)CH₂CH₂- , (thienyl)CH₂CH₂- , (pyridyl)CH₂CH₂- ,
 (2-Me-pyridyl)CH₂CH₂- , (3-Me-pyridyl)CH₂CH₂- ,
 (4-Me-pyridyl)CH₂CH₂- , (imidazolyl)CH₂CH₂- ,
 (oxazolyl)CH₂CH₂- , (isoxazolyl)CH₂CH₂- ,
 (benzimidazolyl)CH₂CH₂- , (cyclopropyl)CH₂CH₂- ,
 30 (cyclobutyl)CH₂CH₂- , (cyclopentyl)CH₂CH₂- ,
 (cyclohexyl)CH₂CH₂- , (morpholino)CH₂CH₂- , or
 (N-pipridinyl)CH₂CH₂- ;

R¹¹, at each occurrence, is independently selected from H,
 35 methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, s-
 butyl, t-butyl, phenyl, benzyl, phenethyl, cyclopropyl,
 cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl,
 cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl,

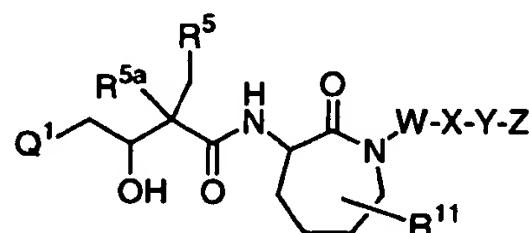
cyclohexylmethyl, cycloheptylmethyl, cyclopropylethyl,
 cyclobutylethyl, cyclopentylethyl, cyclohexylethyl,
 2-F-phenyl-, 3-F-phenyl, 4-F-phenyl, 4-Cl-phenyl, 4-CH₃-
 phenyl, 4-MeO-phenyl-, 4-CF₃-phenyl, (4-F-phenyl)CH₂-,
 5 (4-Cl-phenyl)CH₂-, (4-CH₃-phenyl)CH₂-,
 (4-CF₃-phenyl)CH₂-, (4-F-phenyl)CH₂CH₂-,
 (4-Cl-phenyl)CH₂CH₂-, (4-CH₃-phenyl)CH₂CH₂-,
 (4-CF₃-phenyl)CH₂CH₂-, pyridin-2-yl-, pyridin-3-yl-,
 10 4-CF₃-pyridin-2-yl-, 4-CH₃-pyridin-2-yl-, thiazol-2-yl-,
 azapan-1-yl, N,N-dimethylamino, N,N-diethylamino, N,N-
 dipropylamino, and N,N-dibutylamino; and

R¹³, at each occurrence, is independently selected from H,
 MeO, F, and Cl.

15

18. A compound, according to one of Claims 15, 16, or
 17, of Formula (If);

20



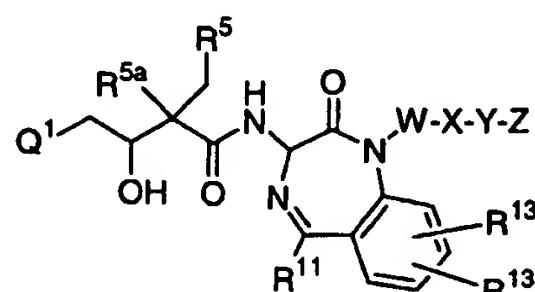
(If)

or a pharmaceutically acceptable salt form or prodrug
 thereof.

25

19. A compound, according to one of Claims 15, 16, or 17,
 of Formula (Ig);

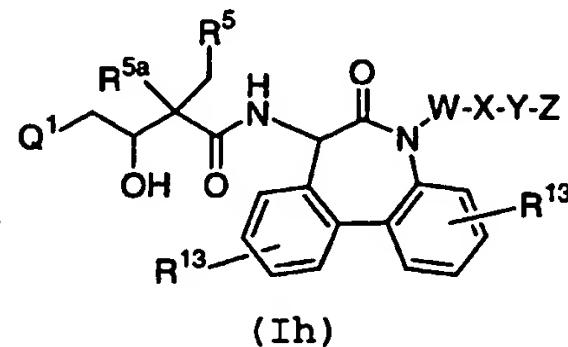
30



(Ig)

or a pharmaceutically acceptable salt form or prodrug thereof.

20. A compound, according to one of Claims 15, 16, or 17,
5 of Formula (Ih);



or a pharmaceutically acceptable salt form or prodrug
10 thereof.

21. A pharmaceutical composition comprising a compound of
Claim 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15,
16, 17, 18, 19, or 20 and a pharmaceutically acceptable
15 carrier.

22. A method for the treatment of neurological disorders
associated with β -amyloid production comprising
administering to a host in need of such treatment a
20 therapeutically effective amount of a compound of Claim 1,
2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,
19, or 20.

23. A method for inhibiting γ -secretase activity
25 comprising administering to a host in need of such
inhibition a therapeutically effective amount of a compound
of Claim 1, 2, 3, 4, 5, 6, 7, 8; 9, 10, 11, 12, 13, 14, 15,
16, 17, 18, 19, or 20 that inhibits γ -secretase activity.